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NEWS SUMMARY

THE CURRENT RIBA exhibition "Building in Concrete" is reviewed and illustrated on p. 649

THE THOMAS LINACRE Secondary Technical School, Wigan, which accommodates 570 pupils and cost over £232,000, is illustrated on p. 651

THE PRESIDENT, LMBA, has sent a message of congratulation to the President of the National Federation of Building Trades Employers of South Africa on the occasion of the Federation's Jubilee Congress. p. 662

A BOROUGH ARCHITECT draws attention in a letter to one of the ways in which legal fees for house purchase can be reduced in the case of new houses. p. 663

THE MINISTRY OF WORKS is sending out a new quarterly return requiring builders to give details of their output and the number of operatives employed. p. 664

DESIGN PROBLEMS OF HOSPITALS were the subject of a paper given yesterday at the RIBA Conference on the Design of Hospitals. p. 665

THE BUILDING TRADE UNIONS have decided to submit a claim for a wage increase of 4d. an hour for operatives in the industry. p. 668

THE LCC's reasons for opposing the Paddington BC's proposal to erect 15-storey blocks of flats at Paddington Green were given at the public inquiry last week. p. 670

THE CHAIRMAN of the Ballast, Sand and Allied Trades' Association has uttered a warning that, unless new gravel pits can be opened, housing and other building work will suffer a serious setback. p. 673

SKYSCRAPERS FOR LONDON

WE have recently seen references to proposals for building two office buildings, one of 27 storeys, in the City, and the other, of 25 storeys, on the South Bank, the latter to accommodate some 6,000 office workers. In such references attention has been drawn to the problems of amenity and neighbourliness, and to fire-fighting, but little has been said about consequential traffic problems.

Respect for existing buildings of both national and civic importance, to say nothing of good manners, requires that the scale of buildings, particularly as regards height, in, for example, the neighbourhoods of St. Paul's or the Houses of Parliament and Westminster Abbey, shall not be such as to appear to give the newcomers precedence, and we believe that this factor has not been lost sight of with reference to the proposed office building on the South Bank.

Neighbourliness requires, *inter alia*, that one building shall not rob the occupants of another of adequate supplies of fresh air and sunshine.

There may be appropriate sites for one or two skyscrapers in London, where the claims of good manners and neighbourliness can be met. If such a site could be found, a well-designed skyscraper on it would be preferable to the dark canyons that will be produced by some of the parallel blocks of high buildings now projected. In either case, however, the traffic problems would be formidable, but those presented by concentration of say, 6,000 workers in one high building would be phenomenal.

The daily transportation of 6,000 office workers to and from their work in one building, to say nothing of those who will visit the building during each day to do business there, presents a major problem both with reference to the ground space about the building and the routes by which the building will be served.

The problem may not be insoluble, but obviously a practicable solution must be found, before sanction is given to the erection of any building or group of buildings which would otherwise add to the existing congestion of traffic which already hampers the trade of the City and greatly inconveniences its citizens. It is not merely a question of requiring that new buildings should provide parking accommodation for the cars or vehicles of occupants or visitors. Such cars and vehicles have to get there and back and in the process may bring traffic to a standstill.

When the second world war broke out there was much vacant office space within the City, due to business moving to the more spacious west, free from the inconvenience of narrow and twisted streets which blocked both access and movement. The City was constantly being rebuilt, but the inconvenience remained and was, indeed, intensified because such rebuilding was limited to individual ownerships, rebuilt one by one.

Trade is the life-blood of the City, but trade cannot be carried out efficiently if those engaged in it have to expend much of their energy in getting to and from their work, or of their time in keeping business appointments. It therefore seems obvious that if the City is to regain its eminence as a centre of trade and commerce, it must be rebuilt to a plan which relates floor space to road and footway capacity, so arranged as to secure the safe and easy circulation of traffic. Always bearing in mind (a) the serious dangers of over-concentration to which the Barlow Royal Commission drew attention and (b) that there is a limit to the office space required by the trade and commerce of the City.

It has been suggested that the fatigue and cost of travel to and from work can be avoided by combining homes and workplace in one building, but clearly that would require the provision of space for such necessities as schools, shops and outdoor recreation. Consequently, building high does not necessarily secure saving in ground space.

The trade of the City and the convenience of its citizens are not all that is at stake. London is the capital of Great Britain and the hub of the Commonwealth. German bombs destroyed much that was mean as well as much that was good and gave opportunity, fast slipping away, for replacing the mean by something of which the citizens of the City and the people of this country and of the Commonwealth could be proud.

The removal of areas of buildings, by bombing, gave the opportunity for a fresh start on a comparatively clean sheet, of which the City Plan, proposed by Dr. Holden

and Professor (now Sir William) Holford, proposed to take advantage. Recent happenings give rise to fears that piecemeal decisions may be undermining the original concept and that a great opportunity for rejuvenating our capital City may be being frittered away.

MINISTERIAL CHANGES

THE changes in the Government announced this week affect the three Ministries with which the architectural profession and the building industry come mostly into contact—the Ministry of Housing and Local Government, the Ministry of Works, and the Ministry of Education. Mr. Harold Macmillan, who now becomes Minister of Defence, has well earned his promotion. When he took office at the MoHLG the idea of erecting 300,000 houses a year was considered fantastic by his political opponents. That that figure has been considerably exceeded is due fundamentally to the energy and enthusiasm he has brought to his task. His success in piloting the controversial Housing Repairs and Rents Bill through Parliament will also be remembered. He is succeeded in office by Mr. Duncan Sandys, who has done well at the Ministry of Supply.

Sir David Eccles, who now becomes Minister of Education, was an outstanding success at the Ministry of Works. His tenure of that office was notable for at least three considerable achievements, i.e., the freeing of much building work from licensing; the splendid arrangements in London for the Coronation; and the plans for the co-ordination of designs in the rebuilding of the City. The knowledge of the building industry which he has gained at the MoW should be invaluable to him in his new post, particularly in speeding up the building of new schools and the reconditioning of old ones. He is succeeded at the MoW by Mr. Nigel Birch, one of the younger men of the Conservative Party, whose good work as Parliamentary Secretary, Ministry of Defence, has marked him out for promotion.

The handsome and agreeable presences of Mr. Macmillan and Sir David Eccles will be missed at the various functions of the profession and the industry which it was their wont to attend. In wishing them all success in their new offices we offer a cordial welcome to the new Ministers, who, we may be sure, will be eager to carry on and extend the good work of their predecessors.

Notes of the Week

CAVE DRAWINGS

APART from its influence on modern art, most of us are fascinated by prehistoric cave painting. Generally, however, this phenomenon, pre-dating "conscious" art, is one of those things we mean to get around to but don't, writes Basil Marriott. The combination of the man, the hour and the place now removes the excuse—at the Arts Council Gallery in St. James's Square, an exhibition of copies by the famous Abbé Breuil of palaeolithic paintings and engravings continues until November 13. Inseparably associated with the subject through a lifetime of devoted research, this leading authority is to lecture (in French) at the Wigmore Hall on Thursday, October 28.

The struggle (since the turn of the century in Europe, culminating in recent search in Africa for the links establishing the full extent of palaeolithic art) to secure recognition of its significance by the scientific world has been the Abbé's whole life. Some early scepticism there may have been due to natural caution, but also, I suspect, to the scientist's proverbial reliance on recorded fact rather than visual perceptiveness or "hunch."

The subject, however, remains a mystery: first, to reconcile such technical competence (rather than artistic inspiration, for it is primarily representational) with the comparative crudity of contemporary artefacts is difficult enough. But, considering the available tools and media, not to speak of the problem of lighting remote subterranean sites, more than the mere urge to record or decorate must have been the motive.

Even more baffling than the "how" is, therefore, the "why." This essentially zoomorphic art portrays generally the known quarries of the stone-age hunter, but where humans are introduced they are often masked or disguised as the animals they stalk. One uses the word "human" partly to reassure oneself, and wonders whether "consort with" should be substituted for "stalk." Indeed, we may never know for certain whether "sympathetic" hunting magic was the purpose, but the exhibition certainly has a disturbing effect. One's delight in its beauty is shot through with the *frisson* evoked by the occult, the sinister and the unknowable. Do not fail to go—but I hope the bus strike is over, as I recommend returning above ground!

COMING EVENTS

FRIDAY, OCTOBER 22

RIBA.—Exhibition on building in concrete. 66, Portland-place, W1. Continuing open until October 30. Mondays-Fridays 10-7. Saturdays 10-5.

SATURDAY, OCTOBER 23

TOWN AND COUNTRY PLANNING ASSOCIATION.—One-day conference on Local Planning. 28, King-street, WC2. 10.30 a.m.-4.30 p.m.

TRADES UNION CONGRESS.—"Exhibition of Designs for Sculptural Pieces for TUC Memorial Building." Imperial Institute, South Kensington, SW7. 10 a.m.-4.30 p.m. daily. Continuing until October 27.

MONDAY, OCTOBER 25

SOUTH EASTERN SOCIETY OF ARCHITECTS AND SOUTHERN COUNTIES FEDERATION OF BUILDING TRADES EMPLOYERS.—Joint meeting. Wig and Gown Hotel, Maidstone. 7.30 p.m.

TUESDAY, OCTOBER 26

INCORPORATED INSTITUTE OF BRITISH DECORATORS AND INTERIOR DESIGNERS.—"The Future of the Craft of Decoration," by Mr. Alan Exley, FRSA, FIBD. Building Centre, Store-street, WC1. 6.30 p.m.

FEDERATION OF MASTER BUILDERS (GROUP 1).—Talk and film on Cement, by Mr. Shellard. Horseshoe Hotel, Tottenham Court-road, W1. 7 p.m.

WEDNESDAY, OCTOBER 27

ARCHITECTURAL ASSOCIATION.—Address by the president, Mr. Peter Shepheard, ARIBA. 34, Bedford-square, WC1. 8 p.m.

ARCHITECTURAL ASSOCIATION.—Exhibition of Members' Sketches. 34, Bedford-square, WC1. Continuing until November 19.

NATIONAL HOUSING AND TOWN PLANNING COUNCIL.—Conference and exhibition. Spa, Scarborough. Continuing until October 29.

INSTITUTION OF SANITARY ENGINEERS.—"Some Aspects of Administrative and Establishment Work in the Engineer's Department of a Large Municipal Authority," by Mr. J. F. Lyne. Caxton Hall, Westminster. 6 p.m.

ARTISTS' GENERAL BENEVOLENT INSTITUTION.—AGM Royal Academy of Arts, Burlington House, Piccadilly, W1. 2.30 p.m.

THURSDAY, OCTOBER 28

ARCHITECTURAL ASSOCIATION.—"Rebuilding of the City," by Messrs. Sergei Kadleigh, J. M. Richards and Arthur Korn. 34, Bedford-square, WC1. 7.30 p.m.

RICS (JUNIOR ORGANISATION).—"Compensation and the Town and Country Planning Bill, 1954," by Mr. Desmond Heap, LLM, LMTPI. 12, Great George-street, SW1. 6.15 p.m.

INSTITUTION OF STRUCTURAL ENGINEERS.—"Foundations, Underpinning and Structural Problems at *Daily News* Building in City of London," by Messrs. F. W. Slatter and A. Brown. 11, Upper Belgrave-street, SW1. 6 p.m.

INSTITUTE OF BUILDERS.—"Builders' Plant," by Mr. H. E. Hodgson. 48, Bedford-square, WC1. 6.30 p.m.

FRIDAY, OCTOBER 29

INSTITUTE OF QUANTITY SURVEYORS (LONDON BRANCH).—Annual dinner. Comedy Restaurant, Panton-street, W1. 7 p.m.

RICS (JUNIOR ORGANISATION).—Annual dinner. Skinner's Hall, Dowgate Hill, EC4. 7 p.m.

INSTITUTION OF STRUCTURAL ENGINEERS (MIDLAND COUNTIES GRADUATES' AND STUDENTS' SECTION.—"Site Investigation for Foundations," by Mr. R. D. Mackey. Civic Centre, Birmingham. 6 p.m.

NURSERY SCHOOL ASSOCIATION.—One-day conference on "The Challenge of Young Children." 26, Portland-place, W1. 10.30.

ABS CHRISTMAS CARDS

FOR their Christmas cards this year, the Architects' Benevolent Society have produced five different designs, each attractive in its own way, and out of these it will be a difficult person to please who cannot find something to his liking. One of the cards is in full colour and depicts the entrance doorway of a church on the summit of Mount Sinai (price 9d. each), and for those who want a religious allusion at a lower cost there is another card, in black (price 6d.) with an abstract design of hammer beam roof and Star of Bethlehem. There are three purely secular cards: a lithograph of the Pont St. Michel and Notre Dame, Paris (6d.); a sailing wherry on the Medway at Rochester (6d.); and a lighthearted design in black and red with characters derived from playing cards and Christmas trees (price 9d.).

The Society are low in funds at the present time, and they are therefore anxious to sell a large number of cards this year. Early ordering is advisable, especially if it is desired to have one's name and address printed. Inquiries from the Secretary of the ABS, Miss B. N. Solly, at 66, Portland-place, W1.

OPEN-AIR SCULPTURE

ALTHOUGH ATTENDANCE was affected by bad weather about 66,000 people went to Holland Park to see the LCC's third international open-air exhibition of sculpture. It was evident that when the weather was fine, there was considerable public interest in the exhibition. (The 1951 exhibition at Battersea Park attracted 110,427 people.) Every visitor was supplied with a list of pieces and sculptors, and about 5,000 copies were sold of a fully illustrated catalogue, on sale at 2s. 6d. Receipts from admission charges, season tickets, and sale of catalogues and postcards have amounted to nearly £4,670.

(*Correspondence will be found on p.* 663)

"Building in Concrete"

A CURRENT EXHIBITION AT THE RIBA

Reviewed by Basil Marriott

OPENED by the President, Mr. C. H. Aslin, CBE, on October 20, this exhibition at the RIBA continues until Saturday week, October 30. It was prepared by the Joint Committee on Structural Concrete, and is an effective international survey of the last fifty years' development of the material and the technique of its use, since though most of the buildings shown are of the last two decades, some very early examples are included for their historical, comparative, or even (in some cases) curiosity value.

Few important architects have not at some time experimented with concrete, and the survey incidentally offers a "cross-reference" to architectural trends interesting both for aesthetic and technological reasons, if the two can be separated in speaking of a material so closely associated with functionalist concepts which do not admit the distinction. Most of such architects are, however, probably not unmindful of the material's possibilities for something approaching "exercises in pure form" and its limitations may have been overstretched here and there in early days.

For instance, a hangover from that period seems to be some indecision as to whether, metaphorically speaking, concrete is best regarded as a "glyptic" or a "plastic" medium, in the sculptor's sense. As the AA President said in a recent broadcast, in so far as architecture has purely formal qualities, they are those of sculpture. One might add, however, that it does not necessarily follow that all architects have the instinctive grasp of sculptural form with which they are sometimes credited, their art being not so much the making of shapes for shape's sake, but the enclosure of space by means which may or may not result in formal beauty.

FREEDOM OF CHOICE

Hitherto those means have been (domes and vaults excepted) best adapted to flat planes, and the new freedom of choice in curved or other shapes facilitated by the emergence of concrete, and notably the prestressed "shell" and pre-formed developments referred to by the President in the Introduction, has caught some less adroit designers on the wrong foot, aesthetically speaking; while others have perhaps found it a "piece of cake" at the expense of more logical and scientific development.

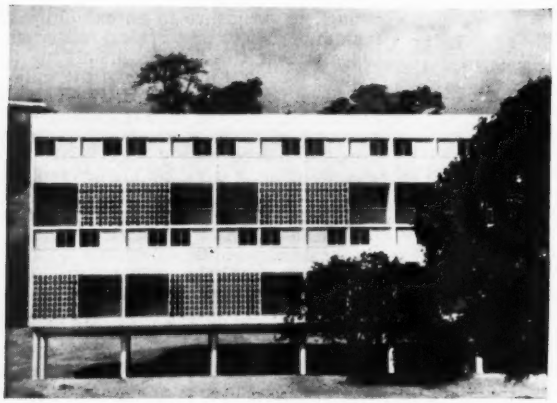
This possibly accounts for the wide divergence of artistic merit in finished result, which I think will persist until the material finally emerges as one in its own right and lingering regard for it as a "substitute" is laid to rest, as with all new materials. Meantime, it is natural that something variously regarded as a gift from heaven or an invention of the devil should produce results alternating between a battle-ground of the styles and a fair-ground for stunts.

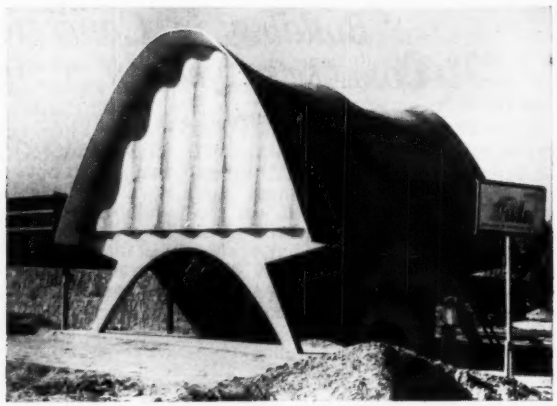
These considerations make it difficult enough to do justice to an exhibition of such importance. The cynical reader who suggests that this is due mainly to the writer's technical ignorance of the subject would be right, but only partly. There is another aspect: the time is coming when concrete as both method and material must be judged purely superficially "in elevation" as it were, by the layman who (as he constantly reminds us) has to live with, and in, it. Moreover, this brings to a head the whole question of architectural exhibitions: they deal with an architecture increasingly demanding to be judged as solutions of problems—economic, structural, sociological and so on—in which the aesthetic content is frankly only one factor, while so long as display technique remains purely visual (and no feasible alternative is apparent) it is only the latter which can be "projected" and described.

Finally, circumstances of the exhibition's timing necessitated a Press preview of the material, both photographic and literary, unmounted and subject to final adjustment if a note such as this is to appear in time. It therefore takes the form only of a "trailer" for a production which readers will surely need no urging to visit. It is divided into eleven sections —Churches; Schools; Hotels, Shops and Offices; Houses; Flats; Hospitals; Industry and Power; Transport; Recreation; Public Buildings; and Bridges. It is prefaced by a useful historical introductory panel, and coloured transparencies, some documents and, it is hoped, models supplementing the photographs, many of which are inevitably "old familiars."

I understand some sample finishes will be on view, and I am glad that this vexed

The University City, Mexico; the Library Block seen across the roof of the Engineering School. F. Serano, L. McGregor and F. Pineda, architects for the School of Engineering; J. O'Gorman, G. Saavedra and J. Martinez, architects for the library. (Right) The Spitallam Kam, Grimsel Lake, Switzerland.





Pedregulho Neighbourhood Unit, Rio de Janeiro ; a four-storey block of flats ; A. Reidy, F. Bolonha, C. Portinho, S. Santos, D. Astracan and G. de Souza Aguiar, architects. (Right) University City, Mexico, showing the Cosnice Ray Pavilion ; F. Candelas, architect.

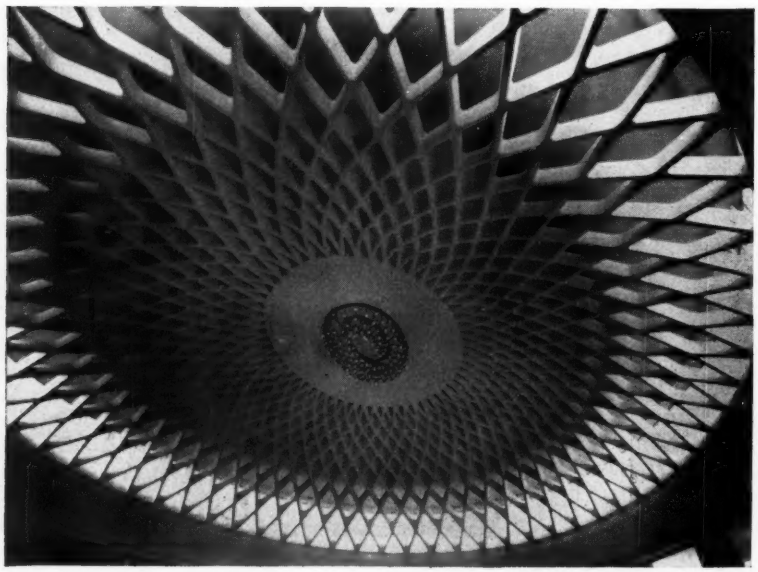
question has not been begged. Many still find the textural qualities and colour of concrete unsympathetic, and there is small doubt that much of the public resistance to the modern movement is due to the choice of materials for its expression, which do not always enjoy the indulgence shown to the shortcomings of traditional ones. This particularly applies to concrete for houses, where the popular " norm " is more sentimental than logical, and the corresponding section of the exhibition is perhaps the most tentative, and even weak.

DESIGN OF FLATS

In flats, however—possibly because of the absence of this preconceived " symbol "—progress has been surer. In this country particularly an identifiable formula emerges, and is now developing into a frame construction with in-filling which (sometimes illogically) may be of traditional materials. Le Corbusier, notably in his *Unité d'Habitation* and even earlier work, and other Continental masters have, of course, been the inspiration, but the exhibition properly credits the Tecton " Highpoints " for much of the pace-setting here.

Our schools, by common consent now second to none, on the other hand, emerge triumphantly from any comparison, though their exploitation of concrete may be rather as part of a policy of improvisation than of untrammelled choice. But more permanent Commonwealth Colleges, and South American examples, illustrate the adaptability of the material to this special problem.

With churches, one is on delicate ground. The modern religious building is notoriously intractable possibly because much depends on " atmosphere " which cannot consciously be created. But obviously a contemporary religious building must reflect the times, and concrete is well to the fore for the expression of that need.



Chianciano Health Baths, Italy, designed by P. L. Nervi.

BRIDGES

In bridges, where the tradition is almost as long as for dwellings but is less inhibited, the material comes into its own. Though it might be wrong to credit the engineer for the aesthetic satisfaction derived from many concrete bridges, there is no doubt that the opportunity for working collaboration with the architect has benefited the latter, and possibly both. What they have recaptured by concrete is the soaring grace of almost organic structures, which at one time looked like becoming static and submerged under architectonic fancy-dress.

In the recreation section, fun-and-games find proper place as well as more permanent structures like stadia, where there can be no two opinions about the method and material's suitability. Though we have little yet to match Nervi's almost gothic fan-tracery—an obsessive motif well exemplified in the false ceiling of his Dance Hall—I feel we could do with it now that the performance can be taken on trust and the " craftsman's flourish " even to the point of some baroquerie or " follies " might be welcome. His concrete cruising ketch, however (to make a lame pun), gives me colder feet than, for instance, the spiral of the Tecton Penguin Pool.

SELECTION PROBLEMS

Space for other sections and my barely decipherable notes on them run out. I can only hope that these scrappy observations may whet the appetite as well as marking, though inadequately, an occasion. Incidental comparisons between the home and the foreign product are not necessarily odious, and if the former seems generally a little duller and overcautious it will be remembered that the latter are chosen from among those originally published here largely for their novelty, and even stunt, value. If the selection has a fault, it is perhaps overgenerosity, and some understandable overplaying of the material's versatility. But this need not prevent the informed visitor from concentrating on what interests him most, or the more casual one from enjoying what I believe is the first wide-angle " eyeful " of the first half-century of something which has come to stay.

View from south-east. The plaque denotes that the building was erected in Coronation year.

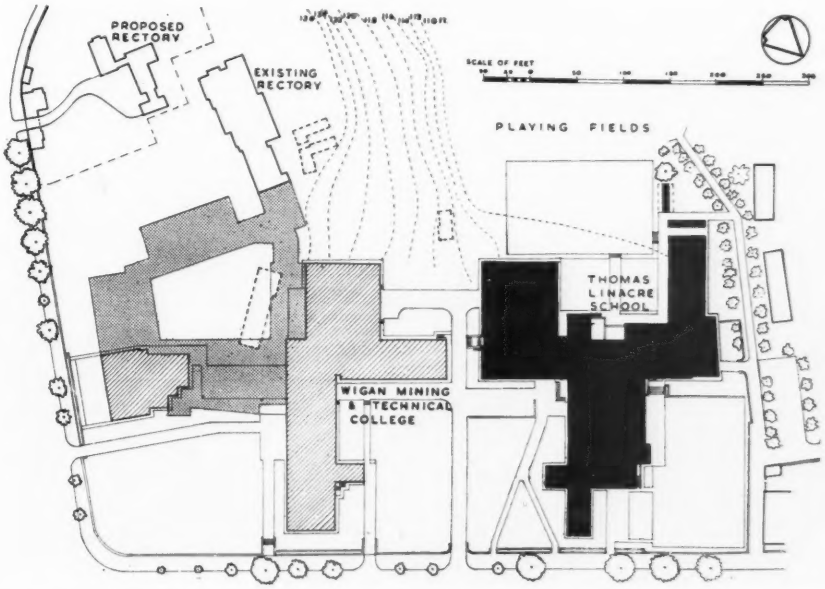
The Thomas Linacre Secondary Technical School, Wigan

Associated Architects
HOWARD V. LOBB, CBE, FRIBA, and G. GRENFELL BAINES & HARGREAVES, AA.RIBA

Senior Assistant Architect
JOHN WILKINSON, ARIBA

Consulting Structural Engineer
FELIX J. SAMUELY, BSc.(Eng.)

Builders: LEONARD FAIRCLOUGH, LTD.



Site layout. The hatched portion represents the Mining and Technical College so far completed. Future extensions are shown stippled.

Main entrance hall, looking towards doors. The illuminated display case for school trophies can be seen.

THE project for the secondary technical school illustrated is part of a larger layout which includes the adjoining Wigan Mining and Technical College opened yesterday (October 21) by Her Majesty the Queen. Mr. Howard V. Lobb, CBE, FRIBA, was appointed architect in 1950 for the whole scheme and has worked throughout in collaboration with Messrs. G. Grenfell Baines and Hargreaves, AA.RIBA. The school, one of the first of its kind in the country, accommodates 570 pupils in three streams. The cost approved in 1951 was £232,275.

The building is severe in outline. Its design, how-

Stairs down to north playground and dining-room.

ever, is evolved from its fundamental purpose and the appearance of the school building has had to be secondary to the internal planning and working of the school. The overriding factor has been the necessity to keep within the cost per place fixed by the Ministry of Education. This has prevented any decorative elaboration on the exterior, even if this had been considered desirable.

The main teaching block faces south, whilst the main hall, laboratories, workshops, dining-room and gymnasium are grouped around the entrance hall from which they are all readily accessible. Corridors have been cut down to a minimum.

The basic design of the classroom block can be regarded as a duplicate clover leaf pattern. Pupils ascending a staircase, turn left for one classroom or go forward for another, or turn right to another. This design is duplicated at each end of the building. In this way, circulation is both vertical and horizontal and nearly all rooms are readily accessible from the two main staircases.

The present school building is a good example of contemporary school design and, when the Mining and Technical College is completed, the quadrangle effect which the architects have planned for the combined sites of the school and the college will be appreciated.

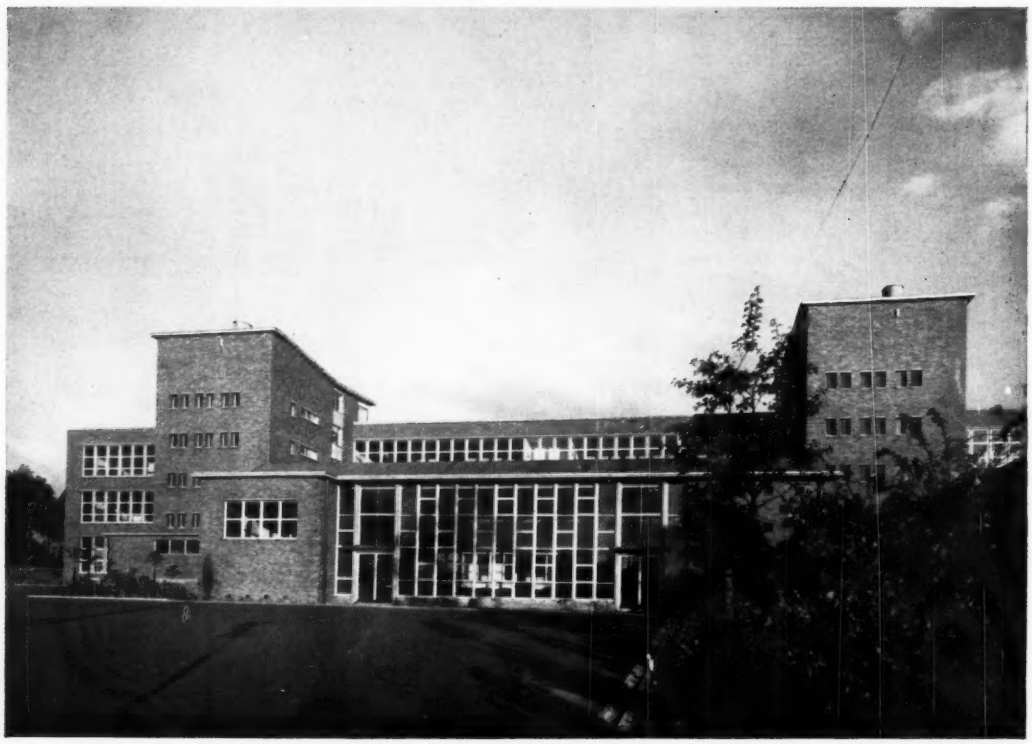
Dominating the school building and forming a long high backbone is the three-storey classroom block 234 ft. long and 38 ft. high, containing 80 per cent. of the formal teaching space. This block runs in an east to west direction giving a southerly orientation to the main classrooms.

Access to the upper floors is made by two staircases, so positioned in the main block that only a small area of corridor space on the upper floors is needed to provide access to all the classrooms there. Two staircase towers contain the toilets and cloakroom accommodation arranged in mezzanine floors, each floor providing the cloakroom space and toilets for two forms.

At right angles to the main classroom block, and forming a complete wing to the south, is the two-storey laboratory block. This wing is 94 ft. long and 23 ft. high and contains four large laboratories together with storage and preparation rooms. To the west of the laboratories lie four workshops, contained in a large square building at the rear of the school, accessible both from the ground and first floors. One playground is at the side of the school and one at the rear.

The school is heated by gas-fired boilers, the boiler houses, two in

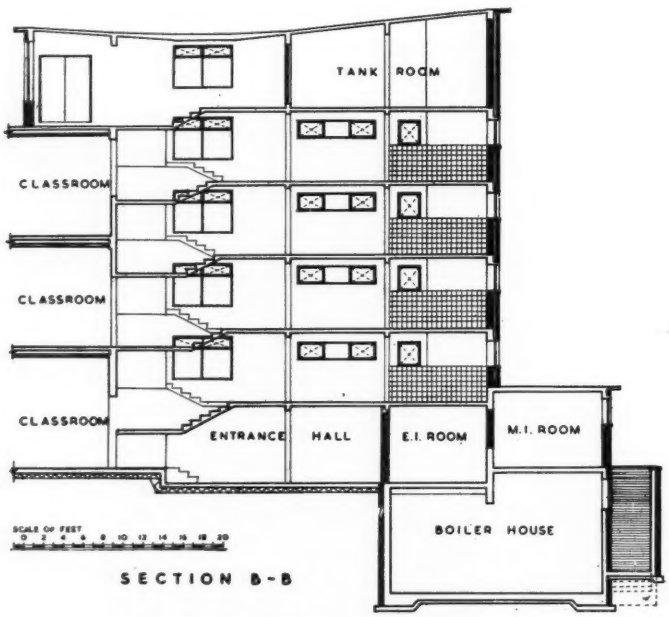
Front entrance. Below : Night view of main entrance.



View from west, showing main window of assembly hall.

number, being located under the base of the main staircases.

Construction of Main Classroom Block.—The structure comprises reinforced concrete frame units each containing two 7 in. by 5 in. columns, a head member and a sill member. The columns are at 3 ft. 4½ in. centres and the frames were erected from one end of the building. All three floors were placed in position as the work proceeded. Spanning between the frames are the prestressed concrete floor units with a span of 22 ft. 7½ in. The method of connection of the various components was by means of steel plates and bolts so that the whole process was as "dry" as possible. The only *in situ* portion of the erection was the structural



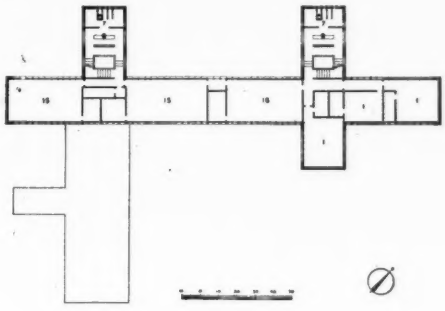
Section through NE lavatory tower and staircase.

floor screeds which span between the prestressed beams, supported on permanent corrugated metal shuttering.

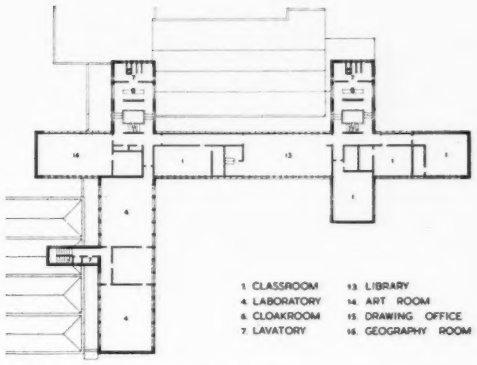
At the rear of the columns and formed in concrete with the column are 3 in. by 3 in. service ducts, in which have been placed the heating pipes to each floor. The 3 in. by 1 in. thick sides to these vertical ducts have been used to support the radiators. The flow and return pipes pass through holes in the vertical ducts, and there is a "blanked off" supporting pipe. This method of concealing the service pipe has enhanced the interior of the various rooms since all pipe work is out of sight.

The external cladding of the structural system is composed of rustic facing brick. The metal windows fit neatly between the 7 in. by 5 in. columns which form the window surround. The two lavatory and cloakroom towers are constructed in *in situ* concrete, as are the flights of stairs contained therein. These towers also have a brick cladding which is pointed in a different manner to emphasise their rôle as large buttresses for the light glazed main classroom block.

The headmaster's room.



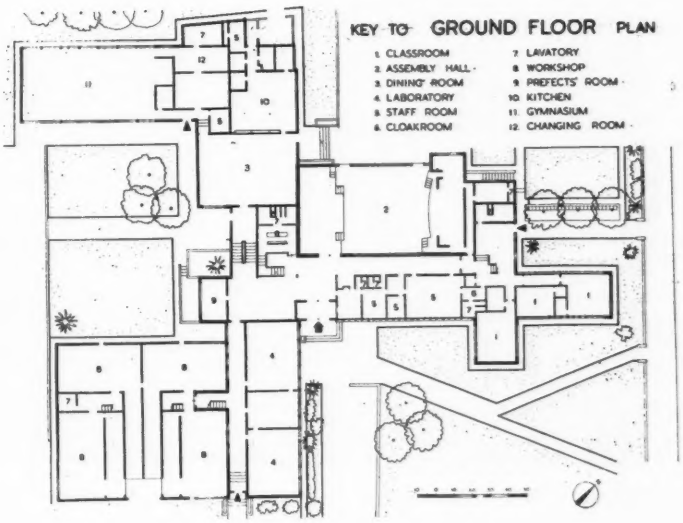
Second-floor plan.



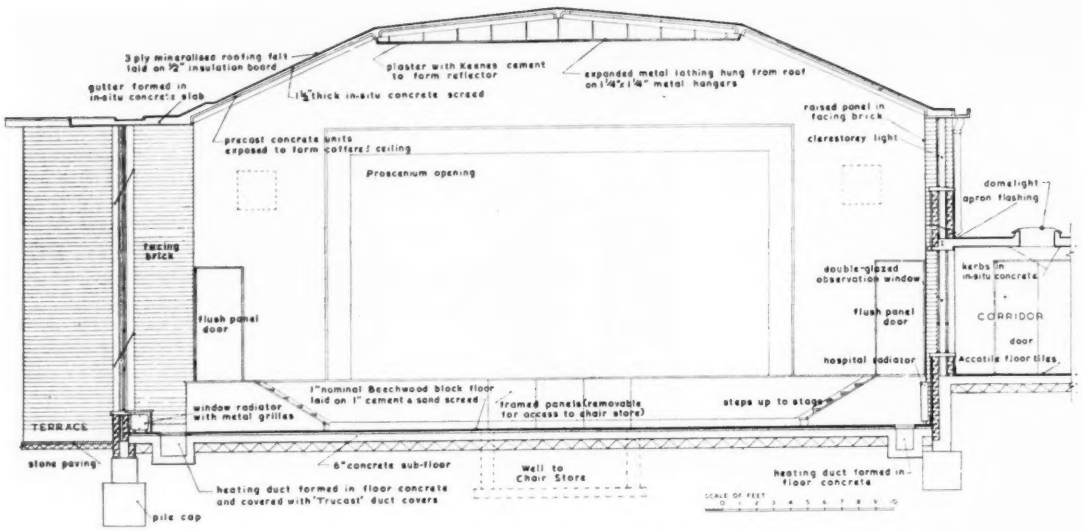
First-floor plan.

Laboratory Block.—This is based on a structural grid of 6 ft. 9 in. with 10 in. by 9 in. columns of reinforced concrete. Spanning between these columns, which are 27 ft. 10½ in. apart, is a light steel tie beam truss, which supports precast concrete trough units spanning in the opposite direction, i.e., between trusses.

Workshops and Gymnasium.—The workshop block is a steel-framed structure, with the roof designed as a space frame. This method enabled an area 81 ft. by 90 ft. 6 in. to be covered without the use of a single internal supporting column. A similar method has been adopted



Ground-floor plan.


3 ply mineralised roofing felt laid on ½" insulation board
gutter formed in in-situ concrete slab
plaster with Keenes cement to form reflector
1½" thick in-situ concrete screed
expanded metal lathing hung from roof on 1¼"x1¼" metal hangers
raised panel in facing brick
clerestorey light
precast concrete units exposed to form coffered ceiling
Proscenium opening
domelight
apron flashing
facing brick
double-glazed observation window
kerbs in in-situ concrete
flush panel door
CORRIDOR
door
hospital radiator
Accotile floor tiles
1" nominal Beechwood block floor laid on 1" cement & sand screed
framed panels (removable for access to chair store)
steps up to stage
window radiator with metal grilles
TERRACE
6" concrete sub-floor
Well to Chair Store
heating duct formed in floor concrete
stone paving
heating duct formed in floor concrete and covered with 'Trucast' duct covers
pile cap
SCALE OF FEET

Cross-section through assembly hall.

for the roof and structure of the gymnasium although here the span is only 40 ft. and the length 70 ft.

Dining-Room and Kitchen.—The dining-room roof is of interest as it consists of a prestressed concrete beam construction with a span of 39 ft. 2¼ in. A similar method of construction has been adopted for the kitchen whilst the kitchen stores are constructed of precast concrete trough units on *in situ* concrete columns and beams.

The locker and changing room areas are formed structurally of *in situ* columns and flat roofs.

Assembly Hall.—The design of the assembly hall roof is perhaps the most revolutionary in the building. It consists of a shell-type roof but with the shape of the roof in four

Assembly hall, looking towards stage. The table, lectern and platform chairs are the gift of the architects. Exterior bricks were used on the jambs. The proscenium is in two tones of grey and the curtain midnight blue. The acoustic "saddle" is in dark Pompeian red. The three blocks of chairs are in three complementary colours.

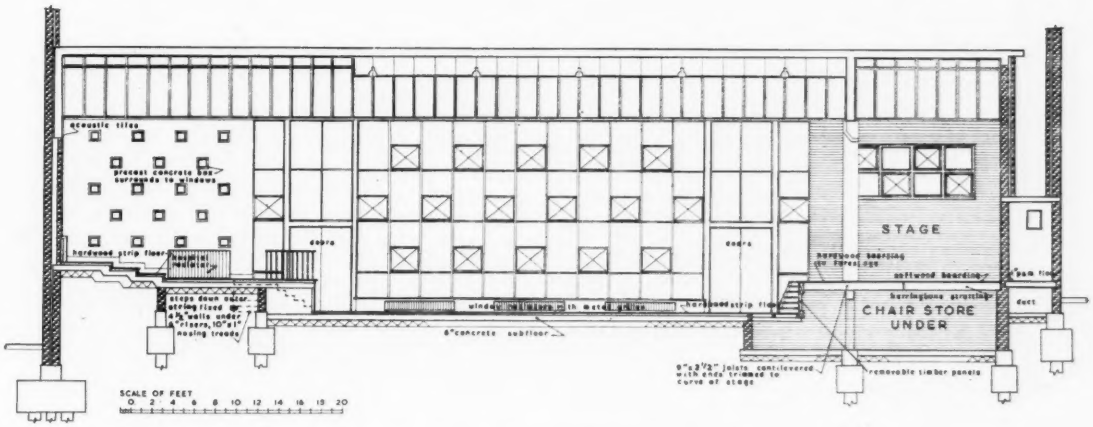
planes at differing inclines on the cross section. The underside of the roof is of precast concrete trough units which form the permanent shuttering to the *in situ* reinforced structural screed above. This screed varies in thickness from 2½ in. maximum to 1½ in. minimum above the top surface of the precast units, and is heavily reinforced. The main body of the hall covered by this roof measures 75 ft. by 47 ft. 6 in. and the roof spans in the long direction between two deep 10 in. wide reinforced concrete *in situ* beams, one at the rear of the hall, the other above the proscenium opening. The roof also cantilevers beyond the main body of the hall a further 25 ft.

By spanning the roof in this way, the necessity for a deep eaves beam normally required for a shell-type roof is eliminated. The eaves beams which are required are in fact horizontal and not vertical. This enables the assembly hall windows to be taken right up the soffit of the lower edge of the main roof.

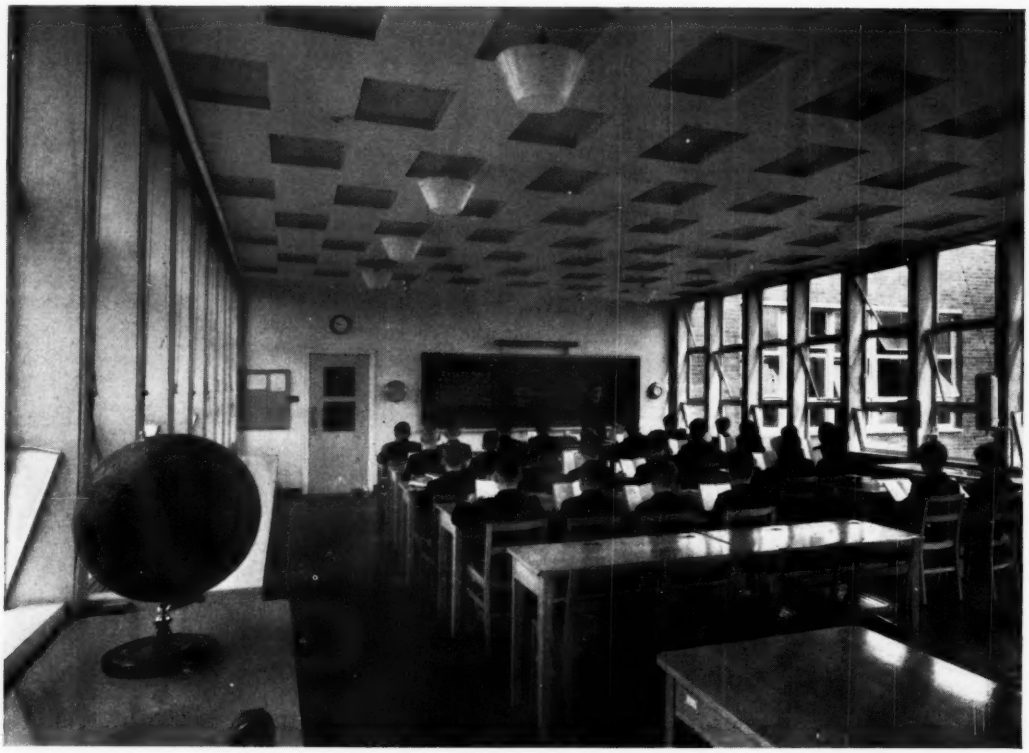
The architects received much help in the early stages with the lighting of the classrooms and hall from Messrs. W. A. Allen and J. B. Bickerdike of the Building Research Station.

The playing fields for the school will be at Bull Hey and at Christopher Park, where the Governors of the Wigan and District Mining and Technical College have offered an area of some six acres for use by the Thomas Linacre School. Negotiations are at present proceeding for the acquisition of the Bull Hey site by the education committee and it is hoped that this playing field, which is immediately adjacent to the school, will be available for cricket. The Mesnes playing field will also be available for use by the Secondary Technical School as well as by the Grammar School.

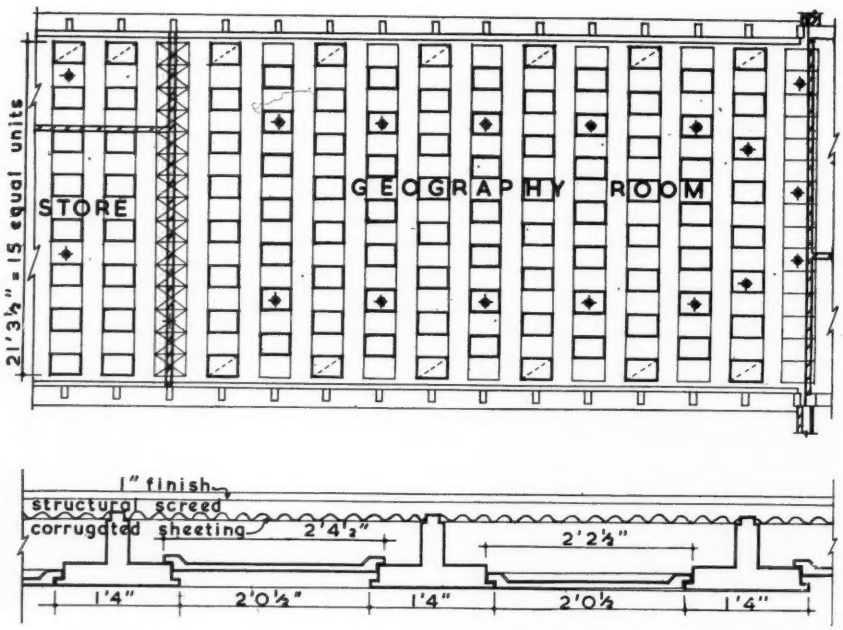
View of assembly hall from platform. The end wall is papered.



Longitudinal section through assembly hall.



The geography room.



Above : Reflected plan of ceiling to geography room. Below : Typical cross-section of T-beams and panels.

A tower staircase. The mural on the top floor is by Colin Giffard, BA, ARIBA.

Following is a list of the sub-contractors and suppliers :—

Sub-contractors :—Joinery, Stanley Porter, Ltd., Bolton ; plumber, John Turton and Sons, Ltd., All Saints, Manchester, 15 ; plasterer and wall tiling, R. H. Catterall and Co., Ltd., Preston ; painter, Clarke and Son (Wigan), Ltd. ; glazier, L. Keizer and Co., Ltd., Liverpool, 3 ; heating, Rosser and Russell, Ltd.

Specialists :—Metal windows, Mellowes and Co., Ltd., Sheffield, 3 ; piling, Franki Compressed Pile Co., Ltd. ; electrical, North-Western Electricity Board, Bolton ; tiled floors, Neuchatel Asphalt Co., Ltd., Salford, 5 ; roofing, Vulcanite, Ltd., Wigan ; wood block and strip floors, R. W. Brooke and Co., Ltd., Liverpool ; roller shutters, Roller Shutters, Ltd., Birmingham, 7 ; industrial flooring, Robinson, Heys and Co., Ltd., Blackburn ; asphalt tanking, Highways Construction, Ltd., Manchester ; metalwork, Quiggin Bros., Ltd., Liverpool ; patent glazing, Hills (West Bromwich), Ltd. ; cloakroom fittings and special ironmongery, Parker, Winder and Achurch, Ltd., Birmingham.

Cork flooring and notice boards, Mundet Cork Products, Ltd., Croydon ; tiled floors, John Stubbs (Marble and Quarzite), Ltd., Liverpool, 7 ; window control gear, Arens Controls, Ltd., East Croydon; stage lighting, Strand Electric and Engineering Co., Ltd , Manchester, 10 ; stage equipment, Watts and Corry, Ltd., Manchester, 10 ; blinds, H. Mears (Furnishers), Ltd., Preston ; steel gates, Bamber Bridge Steel Co., Ltd., Preston ; false ceiling, W. H. Colt (London), Ltd., Surbiton, Surrey ; door furniture and metalwork, Dryad Metal Works, Ltd., Leicester ; glazed faience tiles, Shaws Glazed Brick Co., Ltd., Waterside, Darwen ; acoustic tiling, Tentest Fibre Board Co., Ltd , Hadley Wood, Barnet, Herts.

Suppliers :—Precast concrete, Liverpool Artificial Stone Co., Ltd., Wavertree, Liverpool, 15 ; prestressed concrete, David Chaston, Ltd., Hoddesdon, Herts.; sanitary fittings, Shanks and Co., Ltd., Manchester, 3 ; light fittings, Troughton and Young, Ltd., and Hartley Electromotives, Ltd., Monksmoor, Shrewsbury ; metal floor duct covers, Broads Manufacturing Co., Ltd. ; slate cills, The Bow Slate and Enamel Co., Ltd. ; hose reels, Fire Equipment, Ltd., Salford, 5.

Firms supplying school furnishings—Furniture :—Educational Supply Association, Ltd., Stevenage, Herts ; Mann Egerton and Co., Ltd., Norwich ; Kingfisher, Ltd., West Bromwich ; Cox and Co. (Watford), Ltd. ; R. Foster and Son, Ltd., Wigan ; D. Matthews and Son, Ltd., Liverpool.

Gymnasium equipment : —Niels Larsen and Son, Ltd., Leeds, 9.

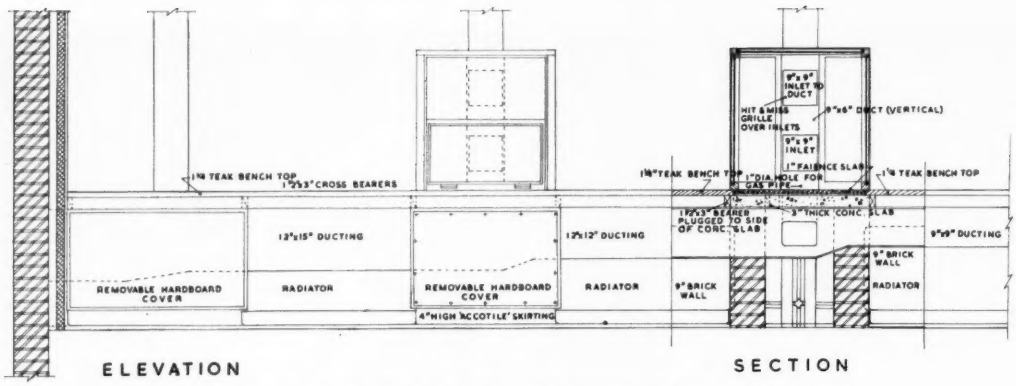
Machine tools and equipment :—Robert Kelly and Sons, Ltd., Manchester ; Lace and Co., Wigan ; George Makinson, Ltd., Wigan ; Thomas Tyldesley and Son, Wigan ; Portass Lathe and Machine Tool Co., Ltd., Sheffield ; Buck and Hickman, Ltd., Manchester, 1.

Laboratory equipment :—Philip Harris, Ltd., Birmingham ; W. and J. George and Becker, Ltd., Birmingham ; Griffin and Tatlock, Ltd., Manchester ; C. Baker of Holborn, Ltd. ; James Woolley, Sons and Co., Ltd., Manchester ; A. Gallenkamp and Co., Ltd. ; Crompton Parkinson, Ltd., Leeds.

Drawing equipment :—Drawing Equipment Productions, Ltd., Bromley, Kent.

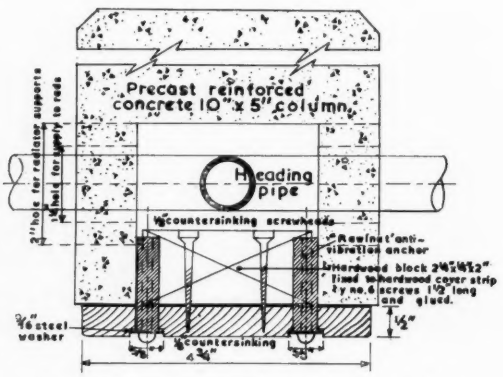
Platform Furniture :—Robin Nance, St. Ives, Cornwall.

The library.



Extract ducting to fume cupboard; this connects to fan in end hall.

A chemistry laboratory.


Precast reinforced concrete 10" x 5" column
Heading pipe
2" hole for radiator supports
Weld for fixing to rods
½ countersinking screwheads
Resinat'd anti-vibration anchor
Hardwood block 2½"x1½" lined hardwood cover strip by no.6 screws 1½" long and glued.
⅜" steel washer
½ countersinking
1½"

Sectional plan through 3 in by 3 in. service duct, showing cover strip.

The gymnasium. The cleanness of the space frames used for the roof should be noted. Colours used have been selected to give good background for ball games.

The Thomas Linacre School

"THE CLIENT'S" VIEWPOINT

By William S. Brace, MA, BSc.

THE building which houses Thomas Linacre School could, I suppose, be described as "functional." Whatever that term may mean to the architect or builder, to the layman it conveys the idea that the building is deliberately designed to facilitate, reinforce and reflect the activities which go on in it. Those responsible for the "functional" form can rarely be those whose activities are thus channelled. This article attempts to set out the reactions of the subjects of a particular architectural essay.

First, we should consider which activities proper to a school could be affected by its design. A school must be more than a mere teaching machine. Though a large part of its activity must be concerned with actual instruction in different subjects and activities, academic and practical, this instruction must never be thought of as the sole or even the chief purpose of the school.

Up to and including the secondary level, subjects are taught less for the actual use which will be made of their content and techniques than for the attitudes of mind which it is hoped to develop. While many boys and girls may use the French, geography, mathematics, metalwork, technical drawing, etc., which they learn at school, far more will find habits of industry, attention to detail, precision and reliability to be most valuable assets.

TWO GROUPS

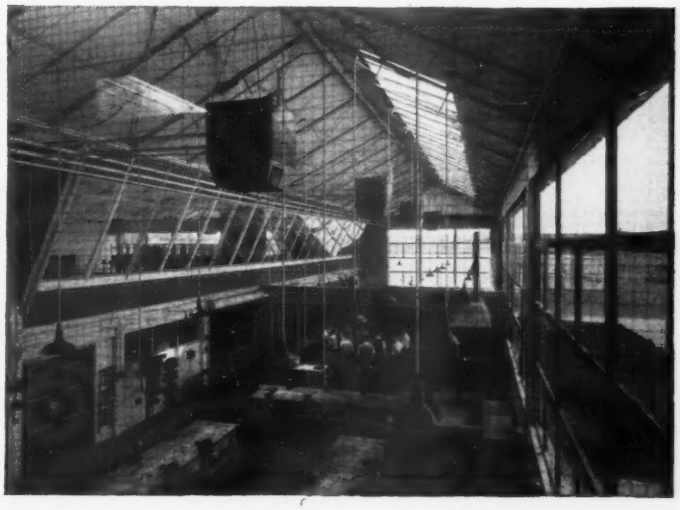
The functions of a school, therefore, fall into two distinct groups—those concerned with specific instruction, and those concerned with the intangibles of character formation.

Let there be no doubt—this school is most effective as a teaching machine. We have never been so well provided for in our lives—so warm, so well lit, so well equipped. In the face of such startling perfection minor defects which, to a teacher, seem easily avoidable, stand out starkly.

The facilities provided compel the school to function in a particular way. There are four workshops, four laboratories, two drawing offices, a geography room, an art room, a gymnasium and a library—14 specialist rooms which must be visited in turn by the various classes. In addition the mathematics and history teachers have a good deal of equipment which is not easily moved from room to room, and there must be a place for music. There remains but three full-size classrooms and three division rooms. It follows that the school must operate on the principle that teachers remain fixed while classes move—and it is difficult to see how any other system could operate in a building furnishing economically a full range of facilities.

Circulation in the school is based on two tower staircases with open wells 35 feet deep. Communication between the staircases (other than through classrooms) is possible only on the ground floor or across the flat roof of the school. Movement from room to room on one stair-

View showing roof over stores, giving access to workshops; this space is also used as an exhibition area.



View of metal workshops, taken through corridor window.

case is easy and rapid, but class movements cannot be confined to one staircase. It must be admitted that, in working out class programmes, no attempt has been made to do this, but it is most unlikely that more than very minor improvements could be effected.

A GOOD COMPROMISE

The three-storey design with two staircases is a good compromise between the need for easy circulation and the needs of light, sound insulation and so on. It is certainly far better for circulation than a sprawling, single-level arrangement, but noises coming downward through ceilings are occasionally troublesome and I have sometimes found sounds conveyed very freely through vertical service ducts—to the discomfiture of certain boys! Horizontal sound insulation is completely satisfactory, thanks to strategically placed storerooms.

When boys reach their places they find themselves in large well-lit rooms, attractively decorated with that simplicity which is conducive to work. The large windows can be a problem. Some provide a first rate view twice a day of the Royal Scot at speed. That is not serious. More serious is the problem of securing a satisfactory blackout when needed for certain kinds of visual aids. Blackout blinds have been promised for some rooms, but the only blinds so far installed are quite inadequate.

The laboratory block is very successful, with four laboratories fitted with all the services that could be desired, and outlets located at the points where they are needed. Two large preparation rooms—one between each pair of laboratories—are the answer to a science teacher's dream.

The workshops are imaginatively laid out and magnificently equipped. Storage accommodation is really ample and there is an enormous display area which has already been put to good use for scientific and technical exhibitions. We much appreciate the use made of variations in the level of the site to provide an inspection balcony for the four workshops.

SOUND INSULATION

There have, however, been two problems. One has been to do with sound insulation. The workshops are effectively in pairs, with no sound barrier between members of a pair. In the worst case a marked improvement could have been effected by the simple expedient of carrying a wall up to the ceiling.

The floors have also caused difficulties. So that they shall be less tiring to stand on they are finished with a layer of a bituminous compound. Unfortunately the compound is adversely affected by oil and by heat. Oil drips from machines are almost unavoidable and in school workshops hot objects from forge, brazing hearth or electric furnace can be expected to find their way on to the floor from time to time. Measures planned to counter these difficulties are not entirely satisfactory.

The design and layout of the school has presented two other problems. It is not feasible to have locker desks in certain specialist rooms, yet these rooms must be used as form bases—that is as bases or homes from which forms move to other rooms as required. This means that such forms must have lockers in which they can keep their books, but in planning the school this was apparently overlooked.

In two cases the only possible sites for blocks of lockers are a considerable distance from the form bases. This appears to be a case in which the actual function of the rooms in question was not fully appreciated by the architects. A possible solution might have been to enlarge slightly the excellent conception of two-form cloakrooms (of which there are eight) and include in each cloakroom a book locker for each boy. The additional cost of these book lockers could have been recovered in part by replacing the locker desks by simple desks throughout the school.

The other problem relates to the playgrounds—there are two, and the only way from one to the other without leaving the school grounds is through the whole length of the school. Furthermore, the nearest toilets are in the school on the first mezzanine floor. This makes it difficult to prevent boys loitering in the school when they might be enjoying our English summer!

I repeat, these are minor defects and detract little from our joy in the school.

THE SCHOOL THEME

More interesting than the success of the school as a teaching machine is its effect on the larger educational objectives, the intangibles of character. We have taken as the theme of our school life, "Be reasonable; be respectful; be responsible." The density of traffic up and down potentially dangerous staircases demands self-control by the boys. We have deliberately avoided regimentation and close control by staff and prefects, preferring to rely on and develop powers of self-discipline. We have been well pleased with the results.

The decoration of the school in pastel shades and the light modern furniture quickly show the effects of misuse, or even of thoughtless normal use. The colour schemes, with frequent changes of colour, attract attention to walls and doors. In quite a short time the boys (with some encouragement) showed interest in preserving the brightness and freshness of the school.

In these two respects, at least, the design of the school has contributed to education in social conduct.

The honesty of the building, too, has had its effect. Almost everywhere the structural principles and methods are clearly to be seen. Beams and inter-locking slabs do not masquerade as monoliths; the graceful cantiiever stairs show clearly where they are supported; light steel roof trusses in workshops and gymnasium can be seen for what they are; concrete and steel do not imitate stone or wood. This absence of pretence quietly teaches its lesson day by day and reinforces the moral training given in the school.

As evidence of its effect, the school library, with over five thousand volumes, is run on a simple open access system which could easily be abused. During the first year we have lost only six volumes, and we believe that at least half of these are simply misplaced.

LOYALTY AND UNITY

A particular problem has been the development in the school of loyalty and a sense of unity. The magnificent building, bright and spacious, giving everywhere the impression that every conceivable facility has been provided, the clean and orderly workshops with many shining machines capturing the imaginations of the boys, the demands of industry for men able to apply science and technology to its daily problems together set a clear goal for the school—but it is an individual goal for each boy. The building and its equipment have been a focus of public interest over a wide area; many of the boys travel long distances to attend, as much as 40 miles a day.

Our very fine assembly hall is a wonderful setting for gatherings of the whole school, but religious differences keep one fifth of the boys out of morning assemblies. In spite of these difficulties we feel that real progress is being made. For example, for our first school play our 400 boys managed to find audiences totalling 1,300. A large part of the credit must go to the architects.

The solution to every problem in design is necessarily a compromise and so variations in the solution can always be suggested. It is easier to suggest the variations than to foresee their full consequences. We believe that some improvements might have resulted if it had been possible to consult at an earlier stage those who will use the school. But we are sure that Thomas Linacre School is a very successful effort to apply the principles of functional school design within the limitations of the site in Wigan and the standards of cost laid down by the Ministry of Education.

MESSAGE TO SOUTH AFRICA

THE PRESIDENT of the LMBA, Mr. R. S. Williams, has sent the following message of congratulation to the President of the National Federation of Building Trades Employers of South Africa, on the occasion of the Federation's Jubilee Congress, which opens in Durban on October 25:

"I send you the warm greetings of the London Master Builders' Association. You have a great history of valuable work for the building industry and the community in South Africa during the past 50 years, and I wish you a very happy and successful time. We look forward to hearing in due course something of your activities during this great occasion.

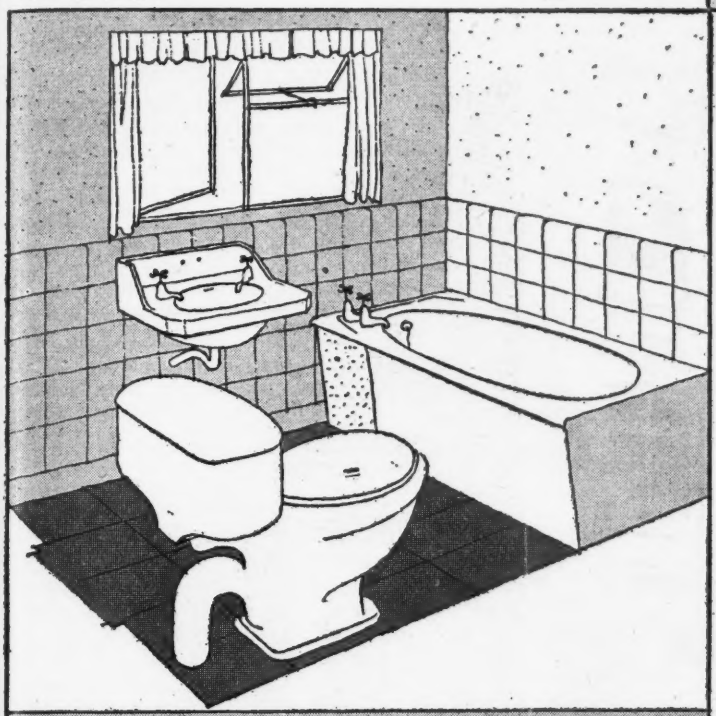
"We are happy that we shall be so well represented at your congress through Mr. H. C. Harland. He did splendid work in the LMBA, and, as I think you know, he enjoyed what is the very unusual experience of being elected President for two years in succession.

"My very good wishes to you and your colleagues for the success of your Congress."

Among the South African Federation's official guests is Mr. Ian M. Leslie, OBE, Hon.ARIBA, editor of *The Builder*.

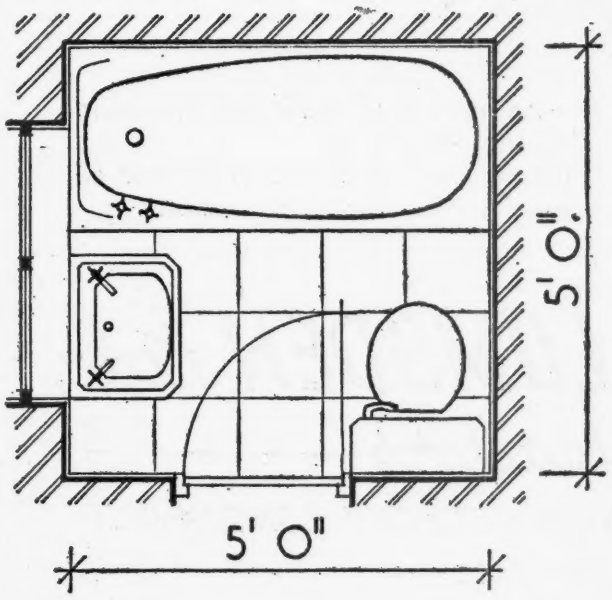
ABERDEEN POST VACANT

APPLICATIONS are invited from persons under 45 years of age for the post of Deputy City Architect for Aberdeen. The salary scale for the post is £1,100 by £50 to £1,350 per annum. Details advertised elsewhere.



The COMPAC Bath

saves the day in a bathroom 5′ x 5′



NOTES:

In the ordinary way, a five-foot square is obviously an impossible space for ' a proper bathroom.' Yet here is one that many a family might envy.

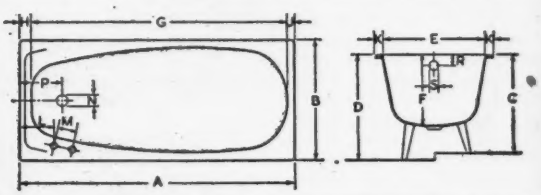
Nothing is skimped. There is no chasing or recessing into the wall.

Notable space-saving features are the recessed w.c. cistern, allowing the pan to be set further back; and the inward slant of the bath panel, giving extra toe-room for the w.c. — another, of course, is the remarkable Compac bath itself.

SPECIFICATION

The " COMPAC " Rectangular Top Bath, porcelain enamelled inside, plain painted outside; ¾" taps; 1¼" overflow; 1½" waste, plug, chain; and 1½" glass enamelled cast iron trap, above floor.

The inside contour of the " COMPAC " Bath is specially designed to give maximum bathing comfort with minimum water consumption. The arrangements of taps on the front roll greatly simplifies the plumber's work in making connections, and makes cleaning easier.



A	B	C*	D	E	F
5′ 0″ 1524 m.m.	2′ 2″ 660 m.m.	1′ 9½″ 546 m.m.	1′ 11″ 584 m.m.	1′ 10½″ 572 m.m.	1′ 3½″ 394 m.m.
G	H	J	K	L	M
4′ 8″ 1422 m.m.	2½″ 64 m.m.	1½″ 38 m.m.	1¾″ 45 m.m.	7¼″ 184 m.m.	4″ 102 m.m.
N	P	R	S		
2¼″ 57 m.m.	9¼″ 235 m.m.	2⅜″ 60 m.m.	1⅞″ 48 m.m.	* Standard Height unless No. 3A Foot is specified	

The internal length is only 3″ shorter than the standard " Magna " bath, and the depth of water is the same. The bath itself is 1½" lower than standard, which makes it easier of access for the old or infirm and more convenient for bathing children.

Notable plumbing features are:

- Far shorter fixing time because tap connections are easier.
- The bath is designed to take the well-known " Cobra " combined waste-overflow fitting, which again reduces fixing time.
- Far easier access to connections. (Drawing shows separate detachable panel for this.)
- The underside of the roll of the bath is arranged to take a vertical panel (note that drawing does not show this) without the usual wooden framing. This panel is fitted with small steel brackets which can be quickly screwed to the floor.

For further information about the Compac Bath write to the Housing Division of :—

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CORRESPONDENCE

THE MITHRAIC TEMPLE

To the Editor of *The Builder*

SIR,—It appals me when I read in your very excellent newspaper on October 8 that you approve the removal of this wonderful Temple of Mithras to an adjacent site, and also commiserate with the directors of the property company who own this site, and indeed thank them for their generous offer. I would have thought that the way this site has been advertised has already amply repaid them for any sum they may make towards the removal.

As an architect, I am amazed that your archeological interests are so lacking in the preservation of an ancient monument in its entirety in the place in which it was found, and one wonders what would have happened to the ancient monuments of Egypt and Greece, which are still intact, if they had been removed to the archeological exhibitions in Athens and Cairo.

When the building of the Government Offices in Whitehall was started, some underground findings (I believe they were cellars) belonging to the Roman period were found, and the then Ministry of Works found the money to preserve them. Surely we could have done the same in this instance together with the £10,000 provided by the Property Company owners.

How comes it that you can condone such a blasphemy of prehistoric art as the taking of this sacred building brick by brick and having it re-erected not far away, and what interest will the present-day and future generations have in the building when they realise it is but a reproduction of what was once the emblem of the real Roman Age? What will they say when they find that the "brickie" has come up to his usual standard by placing the best facings to the front (and, of course, the bonding will have to be looked after)?

I do hope that the architectural profession as a whole will cry out with its loudest voice to the powers that be, if there are any with such intellect and interest, to try to stop this desecration as soon as possible. Has the Council of the RIBA been consulted, and what was the answer?

J. A. DEMPSTER [FRIBA],
Chief Architect, National Coal Board, North-Eastern Division.

Doncaster.

COMMERCIALISED QUANTITY SURVEYORS

To the Editor of *The Builder*

SIR,—The suggestion that £100,000 is needed to start a quantity surveying practice is nothing more than handling the truth carelessly. The best firms of quantity surveyors in London started with practically nothing, and I know one firm which pays nearly £3,000 in wages every week which was started with only a few pounds. Good health, long working hours and mixing with people to prove yourself reliable are the essentials to a suecessful career; money is an afterthought. Any young quantity surveyor reader of yours desirous to make a break on his own must not, however, allow himself to become one of the hands of the clock.

W. MACDONALD.

London, W4.

"Their ice-cream bricks are beautiful and they mix a marvellous cocktail!"

*** *The Jubilee celebrations of the National Federation of Building Trades Employers of South Africa are being celebrated in Durban next week.*

To the Editor of *The Builder*

SIR,—I have read with interest the letter on this subject by "Live and Let Live" in your issue of October 8, and as I have had similar feelings myself, and am in full agreement with what he has to say, I would like to add my few words to his remarks.

The viewpoint from which I write is that of a senior surveyor of a large company of building and public works contractors, who for some time has had the intention of setting up in private practice. From conversations from the study of "appointments vacant," by keeping one's eyes open, and so on, it can be seen quite clearly that the "chain store" idea is developing.

As your correspondent stated, a lot of the work obtained by these larger firms is through lavish entertainment and sales talk, and this, when one reads the rules of conduct of the senior institutes for quantity surveyors, makes such rules rather farcical.

We are told that we are not to advertise or solicit work, or approach the client of any other practitioner, without first having permission from such practitioner to do so. What then does this entertainment, etc., constitute?

In my opinion merely soliciting and advertising—but of a more subtle nature.

When such methods, and the offer of high salaries to potential employees, tend to deprive the provincial surveyors of work which, in the past, was carried out by them, then I would say that it amounts to "cornering the market."

Another point which was mentioned was that surveyors, as such, in the large offices, tend to become merely specialists in one trade, and that personal and individual supervision cannot obtain as in the smaller provincial offices—I would ask, which is better, a tailor-made suit or a mass-produced suit?

My own idea of a good quantity surveyor, bearing in mind your correspondent's remarks, together with what has been written from time to time about professional examinations, is one who has come up the hard way with a reputable contracting firm, passed the final examinations of a reputable institute, and whose main interest lies in quantities. He has had, over the years, intimate knowledge of all trades and can deal with descriptions, queries, and so on, in a more practical way than his counterpart, who has possibly been brought up in a purely professional office, or who has come straight from university or college, with a degree obtained whilst there.

When one has seen projects grow from the first sod cut to the last coat of paint, then one can feel "a scheme grow" as one is taking off quantities, and in view of this I feel that such a quantity surveyor and his office are more capable of giving personal service than larger firms.

To a person, like myself, whose sole ambition is quantity surveying in its true light, all the points mentioned in your correspondent's letter are very disconcerting and discouraging, and I would reiterate "Live and Let Live."

"NORTHERNER."

EXAMINATIONS OF THE RICS

To the Editor of *The Builder*

SIR,—Brigadier Killick, secretary of the RICS, in *The Builder* of October 8, exemplifies the Institution's methods of dealing with tiresome students. Would it be, perhaps, a little uncultured to whisper that these students have contributed substantial sums to the Institution's funds over a period of six, seven or more years?

I have no doubt that Brigadier Killick and the members of the Council will find the "case-histories" which suit their arguments, but perhaps your readers would like to hear my own, which is not untypical.

I passed the Preliminary Examination in 1940. Is this the hall-mark of an "inferior education"? Eight years later, as an ex-Service candidate, I was accorded the five per cent. marks concession, in spite of which I contrived to fail the Intermediate three times, by alternately passing in subjects I had failed the year before, but failing in some that I had previously passed.

After seeing the light, and at the age of 30, I sat for University examinations in sociology and have obtained passes with distinction (70 per cent.) and merit (65 to 69 per cent.). Perhaps this indicates "lack of application," "illiberal education," and "a poor cultural background."

In conclusion, I must observe that Brigadier Killick has carefully sidestepped the really important issues raised by Mr. Willis and your editorial, but I have no doubt that many readers will comment on this more ably than I could myself.

"SAVAGE QS."

LEGAL FEES FOR HOUSE PURCHASE

To the Editor of *The Builder*

SIR,—I note that it is now proposed to arrange for legal fees on new houses to be included in the building society loan.

When a plot of ground is purchased privately for building, the only legal fees charged are on the value of the land. A contract document is all the builder then

requires, at a small cost in stamp duty, and the house can be erected and occupied without further legal charges.

When, however, a speculative builder is approached, and agrees in due course to build a house on his land, for some reason the above procedure is not adopted, but the land and the house are conveyed together.

This involves legal fees on the total cost which may be £2,500 instead of on the land only, say £400.

Local authorities with building land for sale in plots, already dispose of it direct to the building owner, and thus keep legal charges to a reasonable amount.

Again, should an owner-occupier decide to build a large extension on to his house at any time, no legal fees are charged on the "sale" of the additional building to him.

A reason put forward by a speculative builder is that the owner, after purchasing the land, might not take the house. This, however, is covered by the normal RIBA or similar building contract agreement.

It is to be hoped that the matter will be looked into very carefully, as there is no need to charge high legal fees on the "sale" of a house which is to be erected.

As the borough architect of a local authority I am obliged to remain anonymous.

CHARTERED SURVEYOR.

PROBLEM OF THE OLDER WORKERS

To the Editor of *The Builder.*

SIR,—Your leading article on this subject in your issue of October 8 performed a useful service in summarising the report on "The Working Fitness of Older Men," prepared by Mr. F. Le Gros Clark for the Nuffield Foundation. Enterprising employers of building labour, particularly of labourers and navvies, can contribute to the continuing productivity of their older men by consideration and review of the small tools supplied for the use of their workmen.

Perhaps I may be allowed to draw the attention of your readers to the merits of the long-tailed shovel. This shovel has a pointed blade with a short socket into which is wedged the chamfered end (to provide a "set") of a 2-in. diameter handle 5 ft. long. The long-tailed shovel is in general use in Ireland in contracting, on the roads and in agriculture for shifting loose materials such as sand, gravel, ballast, loam and small coal. It is specially suited to the needs of the older men because it is used *standing*, with considerable leverage. I suggest that the building industry's favourite tool, the No. 2 London shovel, is more suitable for use by strapping young navvies throwing spoil from trenches, etc.

I commend the long-tailed shovel to the attention of go-ahead highway authorities, restricted as they are to the payment of the bare trade union rate for their labour and the relative senility of their road gangs. The long-tailed shovel which I brought back from Ireland 18 months ago and which was rejected out of hand by the highway engineer of an English local authority is still available, on loan, for experiment by interested parties.

C. R. VINYCOMB.

54, Wickstead-avenue,
Leagrave, Luton, Beds.

News of the Week

MINISTERIAL CHANGES

GOVERNMENT changes involving 12 senior appointments and a number of junior posts were announced in a statement from 10, Downing-street, on Monday. As a result, Mr. Harold Macmillan, formerly Minister of Housing and Local Government, has become Minister of Defence, his place being taken at the Housing Ministry by Mr. Duncan Sandys, formerly Minister of Supply. Sir David Eccles has become Minister of Education, his former post of Minister of Works having gone to Mr. Nigel Birch.

Mr. W. F. Deedes has been appointed Parliamentary Secretary to the Ministry of Housing and Local Government, his predecessor, Mr. Ernest Marples, having become the Parliamentary Secretary of the Ministry of Pensions and National Insurance.

MINISTERIAL APPOINTMENTS.—Mr. Duncan Sandys, who has been appointed Minister of Housing and Local Government and (right) Mr. Nigel Birch, the new Minister of Works.

COVENTRY CITY ARCHITECT

COVENTRY'S Lord Mayor (Ald. John Fennell) has asked the Nottinghamshire County Council to release Mr. D. E. E. Gibson, CBE, ARIBA, the Coventry City Architect and Planning Officer, from his acceptance of the position of County Architect to Nottinghamshire.

LESS FORM FILLING

IN THE COURSE of the next few days a "representative sample" of builders in all parts of the country will be receiving a new form from the Ministry of Works requiring them to render a return of the value of their output in the last quarter and the numbers of operatives employed by them. It replaces the previous quarterly return, and once building work is freed from control the monthly site return (Form CPS 23) will also come to an end. Thus the introduction of the new form should not, say the Ministry, mean any increase in form-filling by builders.

In recent years the Ministry have been able to obtain all the information they needed about the industry through the system of licensing controls, but as licensing comes to an end this source will dry up—hence the new form. If it be asked why the Ministry are so interested in obtaining building statistics the answer must be sought in higher Government policy. First, the Government, in one way or another, buys more than half the industry's output, and is, therefore, interested in knowing how building stands, but secondly, and this is regarded as even more important, is the need of the Government of the day to maintain full employment at all costs. A knowledge of capital invested in the building industry is of the greatest importance here as it provides, in the opinion of economists, the best possible barometer of conditions in the country.

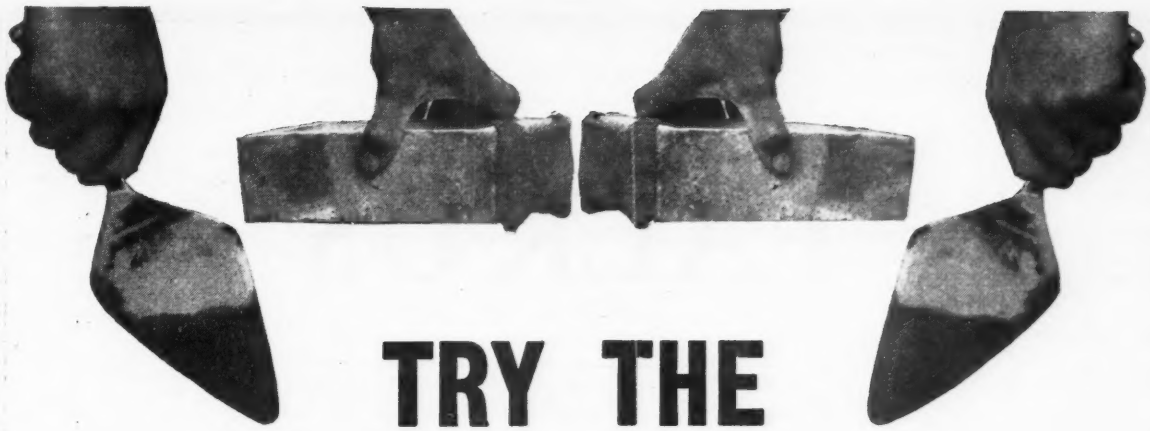
In obtaining this information the Ministry are to make full use of the sampling technique, and at each quarter—except once a year, when the form will go to all builders and contractors—only some 15,000 of the 130,000 firms on the Ministry's list will be circularised. Use will also be made of the Board of Trade census, and when this is taken the quarterly return will not be sent out. In addition, however, a monthly return of labour, again using the sampling technique, will be required.

The hope that it would soon be possible to abolish licences for building was expressed by Mr. Macmillan, then Minister of Housing and Local Government, in a by-election speech last week at Wakefield.

FROM "THE BUILDER" OF 1854

Saturday, October 21, 1854.

CONVERSAZIONE OF THE ARCHITECTURAL ASSOCIATION.—The report which was read at the opening meeting of the twelfth session of the Architectural Association, held at Lyon's Inn Hall, on the 6th instant, congratulated the members on the continued progress of the society, on the cheering conviction that its existence had not been unserviceable, and on the fact that many obstacles and misapprehensions, which had to be overcome at an earlier period of the existence of the association, had now in a great measure vanished.



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General Design Problems of the Hospital

A PAPER AT THE RIBA CONFERENCE ON THE DESIGN OF HEALTH BUILDINGS

A PAPER on the "General Design Problems of the Hospital" was given yesterday (October 21) by MR. R. LLEWELYN DAVIES, ARIBA, Director, Division for Architectural Studies, Nuffield Foundation, at the RIBA Conference, on the Design of Health Buildings which is being held at the RIBA, 66, Portland-place, W1, this week, and from which we take the following extracts. In his paper, Mr. Davies dealt with some of the problems of hospital design in the light of research carried out by the Investigation into the Functions and Design of Hospitals and more recently by the Division for Architectural Studies of the Nuffield Foundation. Mr. Davies said:—

One of the first problems which the hospital authority and the architect have to consider when faced with the design of a building, whether it be a complete hospital, an individual department or a ward block, is the problem of size. On what scale is accommodation required?

Hospitals exist to meet the demand for care arising from the population which they serve. Until comparatively recently the supply, in terms of hospital facilities, was usually well below the need. And additional service provided through the building of new hospitals has always been rapidly absorbed by the community. But we can no longer afford to provide services without first trying to assess the true demand for them. We must see to it that the limited resources available for hospital construction are used in the best way—that is, to provide a balanced service.

ESTIMATING DEMAND

The Investigation has undertaken a special study of the means whereby the demand for hospital care from a population can be measured. In the course of the study, a case-load survey covering the area of the Norfolk and Norwich group of hospitals, serving a population of approximately 500,000, was made. The results of this survey established what was the explicit demand during 1951 for in-patient beds in each specialty, for out-patient sessions in each specialty, and for the casualty service. They also show the load of work, arising from in-patients and out-patients in each specialty, put on the operating theatres and departments of radio-diagnosis and pathology.

A survey of this sort can give a picture of the demand for hospital care and can be used to guide a building programme, and it is suggested that any hospital authority faced with an important building programme could well make a survey of demand in its own area. This has in fact been done by the Hospital Board for the Eastern Region of Scotland, preparatory to drawing up the schedule of requirements for an important new hospital in Dundee. Thus a quantitative basis can be established for the design, and we need not "continue to plan by guesswork, opinion and probability, an unhappy triumvirate, which makes the architect's work difficult and which may lead equally to over-building or to under-building the hospital."

If the annual in-patient demand in a particular specialty is on average n patients, then the *critical* number of beds —which must be slightly exceeded in practice—is

$$x = \frac{n \times L}{365 \times a}$$

where L is the average length of stay, and a is the occupancy rate achieved *when there is a waiting list*, i.e., rate due to administrative efficiency. For example, suppose $n = 400$, $L = 10$ and $a = 0{\cdot}8$, then

$$x = \frac{400 \times 10}{365 \times 0.8} = 13{\cdot}7$$

In order to have a *finite* average waiting time the critical number must always be exceeded so as to allow for fluctuations in demand and length of stay. We should require about 15 beds in this case to attain reasonably good working conditions. The number needed in relation to waiting time and queue length has been studied by the Investigation. It should be noted that the determination of average length of stay and occupancy rates must be considered in relation to the particular specialty and local conditions. National averages are not satisfactory for this purpose. Similar considerations apply to out-patient departments.

The number of out-patient sessions to be provided for can be calculated from the weekly demand. This must be done for each specialty separately. If m is the average weekly demand for consultation then the *critical* number of sessions required will be

$$y = \frac{m \times t}{s}$$

where t = average consulting time in minutes, and s = the total length of each session in minutes. For example, suppose there is a demand for 120 attendances weekly in one specialty, the average consultation time is five minutes and the length of the session is 150 minutes, then y = four sessions per week. This is the critical supply, which must be somewhat exceeded in practice.

SEASONAL FLUCTUATIONS

Seasonal fluctuations, as distinct from ordinary random fluctuations from day to day, have to be considered separately. With out-patient departments we may be able to analyse data quarter by quarter, say, and show how different provision is required according as the *average level of demand* is high or low.

Average consulting times for a number of specialties as observed by the Investigation are given in Table I. These are average times observed in practice. These figures should not be used in the planning of a new hospital, without due consideration for local conditions and trends in medicine.

From the sessions per week the number of consulting suites can be calculated. For example, suppose provision is required for the following sessions:

Clinic	No. of Sessions per week
1. General medicine	14
2. General surgery	17
3. Gynæcology	8
4. Dermatology	4
5. Psychiatry	8

Supposing that each consultant in general surgery, general medicine, and dermatology required the use of two rooms, the gynæcologist the use of four rooms and the psychiatrist one, then we have:

General medicine, General surgery, Dermatology	35 sessions per week requiring 2 rooms.
Gynæcology	8 sessions per week requiring 4 rooms.
Psychiatry	8 sessions per week requiring 1 room.

Thus a four-room general purpose suite would be required as follows:

General medicine, General surgery, Dermatology	17½ sessions.
Gynæcology	8 sessions.
Psychiatry	2 sessions.
	27½, say, 28, sessions per week.

Three four-room suites would therefore be needed, providing an available weekly total of 33 sessions. A complete four-room suite would be unused for 5 sessions per week. This extra accommodation would probably be needed in order to allow for flexibility in the clinic programme. These calculations are based on the idea, supported by some of the Investigators' studies, that a standard consulting suite can be used at different times by different specialties. If accommodation is reserved solely for the use of a particular specialty, many more rooms would be needed and much of the accommodation would be unused at any given time.

Thus it is possible to calculate the provision to be made in terms of beds and consulting suites to meet a given demand, or conversely to say what load of cases given accommodation can be expected to cope with.

The Investigation's case-load studies give some indication as to the load to be expected on the special departments; they show, for example, how many X-rays of different types were called for by the out-patient and in-patient services during the period under survey and give similar in-

TABLE I

AVERAGE TIMES FOR CONSULTATION AND EXAMINATION IN A NUMBER OF CLINICS

Clinic	New Patients		Old Patients	
	Receiving Consultation	Average Time (to nearest minute)	Receiving Consultation	Average Time (to nearest minute)
General medical	20	19	55	11
Gastric	36	20	242	8
Diabetic	—*	—	87	6
Anæmia	23	17	67	9
Chest	19	15	64	10

* Only one new patient presented himself at this clinic.

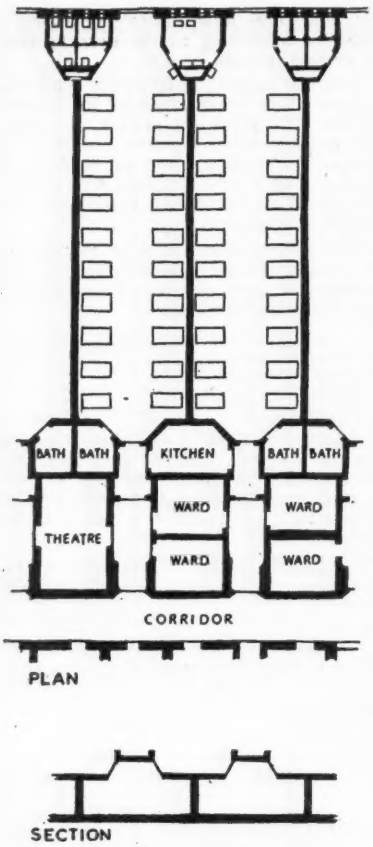


Fig. 1.—Wards at the Royal Victoria Hospital, Belfast.

formation with regard to pathology and operating theatres.

Calculations on the lines I have been describing can thus determine the scale of provision for some, if not yet for all, of the principal departments of the hospital. No two hospitals will be found to have the same requirements. Generally a new hospital is designed to supplement existing services in the area rather than to provide a completely comprehensive unit. Again, the approach to design will turn on the site, which may be large and unobstructed or very restricted. Hence there are no general rules for hospital planning.

The research with which I have been associated has been concentrated on the functional requirements of certain departments, particularly the ward, the outpatient department and the operating theatre. The central problems, as we have seen them, are economy of building space and of building cost, planning for flexibility in use and anticipating and providing for expansion.

WARDS AND WARD BLOCKS

The grouping of wards into ward blocks is a perennial subject of debate. The open, pavilion ward which was first introduced on the Continent during the first half of the nineteenth century and which was approved by Florence Nightingale lent itself specially to single-storey design. A long corridor forms the spine of this arrangement; the wards form spurs on one or both sides with the long axis at right-angles to that of the corridor. The space between the wards is commonly about 40 ft. in width. The "Nightingale" ward had windows on both sides and was generally sited with its axis running north and south. Single-storey wards arranged in this way, although each ward looks into its neighbour on either side, are usually well lit, and the sun for much of the day can shine over adjoining buildings and through the windows. This gives them a pleasant atmosphere and the enclosed gardens or courts can be very agreeable—as they are, for example, at the Kettering General Hospital.

The major objection to this layout is that for a hospital of any size it occupies a great deal of ground and results in considerable walking distances. Attempts have been made to reach a greater compactness while preserving the essentials of the layout. A unique and ingenious modification of the single-storey layout is to be seen at the Royal Victoria Hospital, Belfast, built in 1903. Fig. 1 shows the ward layout of this hospital. Here the wards are artificially ventilated. Thus they can be placed side by side without any intervening open spaces, giving a very compact arrangement. The disadvantage is that there is no view from the wards, which are lit by high-level clerestory windows.

The arguments for stacking wards vertically, one above another, are quite strong. The majority of wards can be identical in plan and this lends itself to economical structural design, with bearing-walls or columns running unbroken through the height of the building. The same services, supplies and arrangements for disposal are required at the same point in each ward. Vertical plumbing stacks, pipe-runs and service lifts can therefore be planned to serve a large number of wards, placed one above another. Vertical planning can give good outlook, unobstructed sunlight and ventilation to all wards.

In considering the different forms which a ward block may take, the position of the main vertical circulation, containing stairs and bedlifts, is critical. It is now a recognised principle that each ward should be a cul-de-sac and should not be used as a corridor for traffic to other wards or other parts of the hospital. Thus, each ward must have direct connection to the point of vertical circulation. Fig. 2 shows four arrangements to give one, two, three or four wards on each floor, served from one main staircase and lift-shaft. The more wards per floor, the lower will be the overall height of the ward block for a given total number of beds and the greater will be the use made of the lifts and stairs. Broadly speaking, the more beds per floor the more economical will be the building, both in first cost and in maintenance. The arrangement at A, Fig. 2, has only one ward per floor, and has been used in several new hospitals in Scandinavia. Arangement B, Fig. 2, is often used for hospitals of medium size, recent examples being at St. Lô in Normandy and the new hospital for Swindon, Wiltshire. It gives more beds per floor than arrangement A, while maintaining the great advantage that the views from

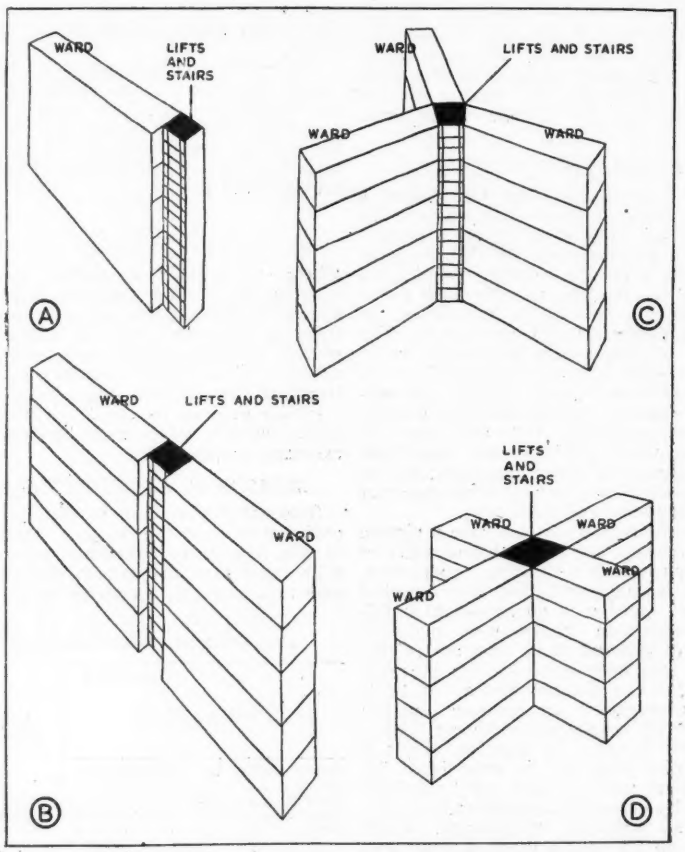
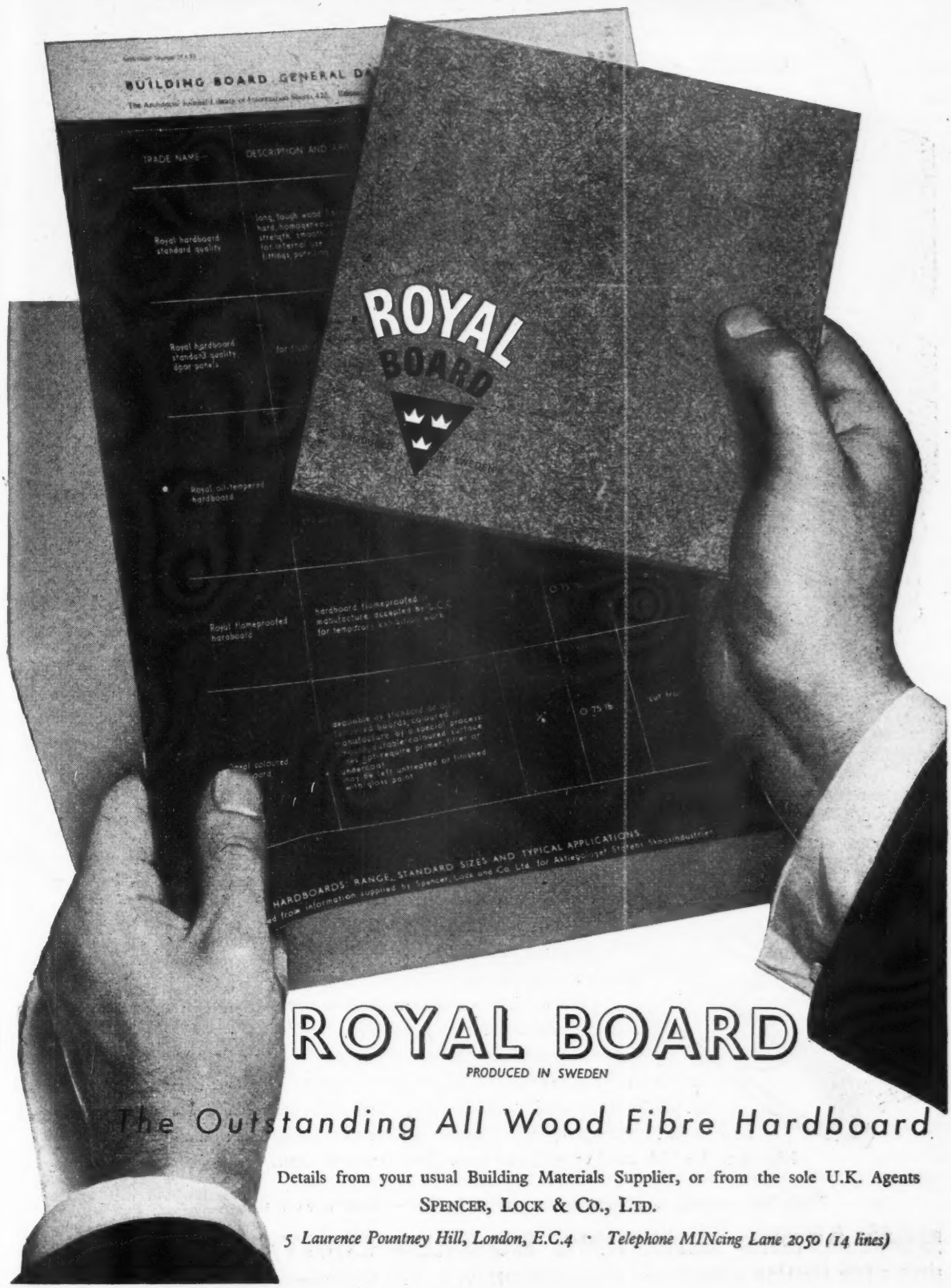


Fig. 2.—Various arrangements for multi-storey ward blocks.

SPECIFY WITH CONFIDENCE



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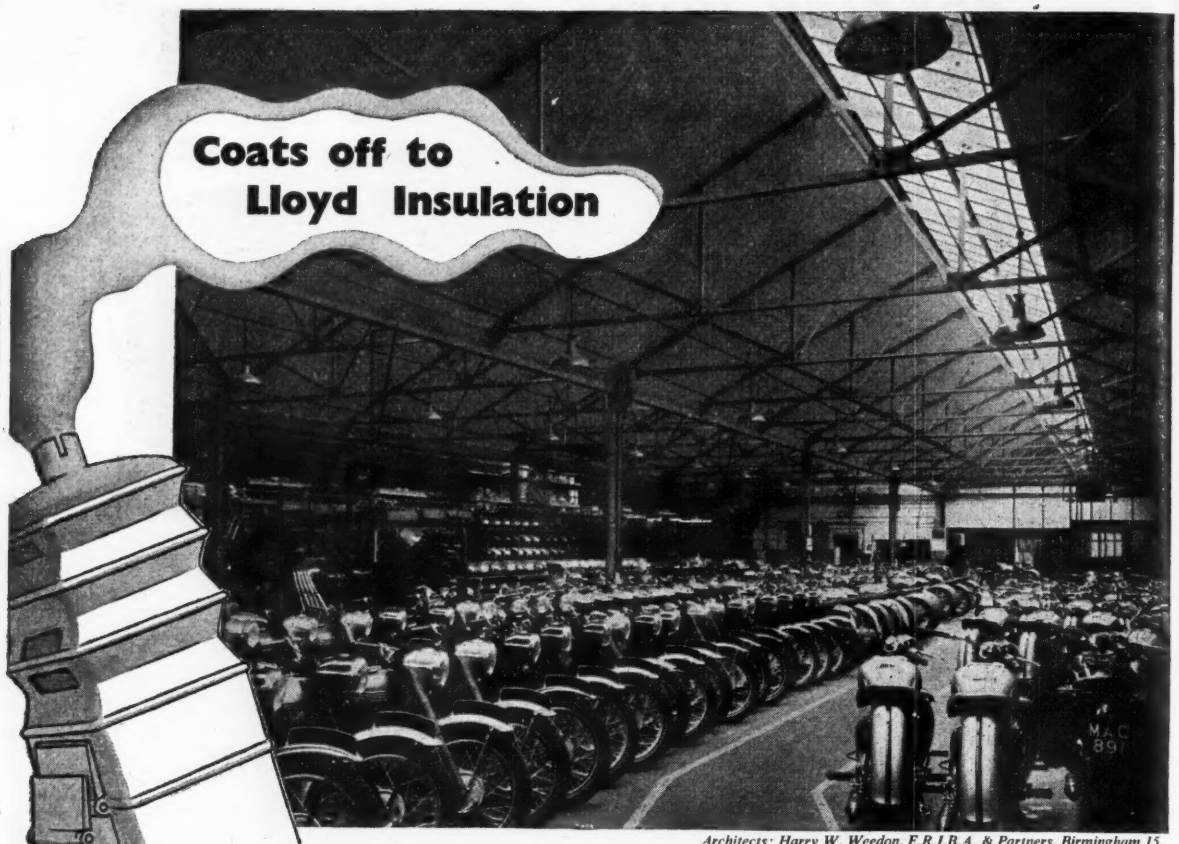
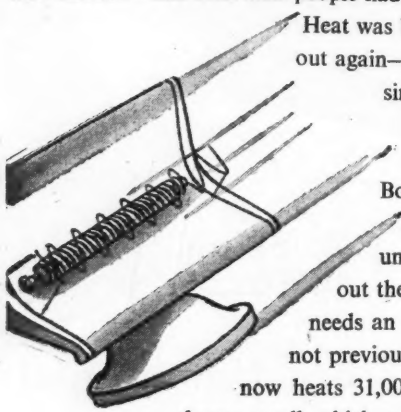
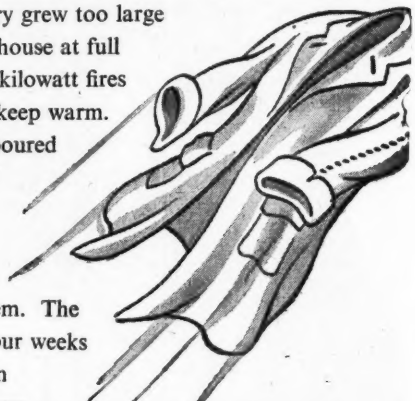


Architects: Harry W. Weedon, F.R.I.B.A. & Partners, Birmingham 15.

The Triumph motorcycle factory at Coventry was built in 1942 to replace, in the shortest possible time, an existing factory which was destroyed by enemy action. Lining material and new boilers were unobtainable at the time and after the war the factory grew too large for its heating plant. In addition to the boiler house at full capacity, sixteen coke stoves, about a dozen two-kilowatt fires were needed—and even then people had to wear overcoats on occasions to keep warm. Heat was being poured into the place and it poured out again—through the 100,000 square feet of single-skin corrugated roof. Then it was decided to line the whole roof with ½ in. Lloyd Insulation Board, fixed by the Lloyd Talon System. The job was finished in eight weeks—four weeks under schedule. Triumph have thrown out the sixteen stoves, all the heaters, no-one needs an overcoat, everyone is comfortably warm. The same boiler plant which could not previously cope with the main shops now heats them easily. But that is not all—it now heats 31,000 square feet of offices, laboratories, stores and assembly bays as well, which, need we add, also have Lloyd Insulated roofs.





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all wards are unobstructed and all have equally good sunlight.

Arrangement C, with three wards per floor, has been proposed for larger schemes, such as the very large new hospital at Helsinki, Finland. It provides more beds per floor than type B but is less satisfactory from the point of view of outlook and orientation. The cruciform block, type D, is advocated and used by the French architect, Jean Walter. While it provides for the maximum number of beds to be served from one circulation point on each floor, view and sunlight are much obstructed, the outlook from windows near the centre of the block is very forbidding, and a disagreeable character is created in the rooms.

In this country, where there is some sentiment against tall buildings, arrangements such as that shown in Fig. 3 are sometimes adopted, in which a number of blocks three or four storeys in height are strung together. If the cul-de-sac principle is maintained this results in several points of vertical circulation, each of which has to have stairs and bedlifts. Circulation at ground level is complex, as access to the foot of each staircase has to be provided not only for people but for a considerable

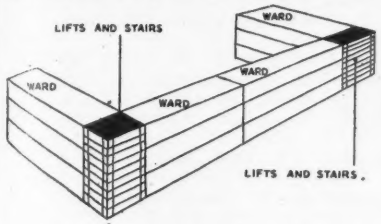

Fig. 3.—Ward block with two points of vertical circulation.

variety of supplies coming from different points.

The total number of beds required in the hospital and the limits set to the height of the building are generally the crucial factors in determining which solution is adopted. The limits to be set for height are difficult to fix and technical considerations in themselves do not provide any clear answer. At one time, fire risk was thought of as setting a height limit but this is no longer so to-day.

SIZE OF THE WARD

It is generally agreed that it should be an aim in hospital design to achieve a friendly and reassuring character rather than an imposing or institutional one and tall buildings have been criticised as having a terrifying effect. These are considerations which the architect must weigh, but for which rules should not be laid down.

The number of beds in the ward or nursing unit has important implications in determining the best form for the ward block. Current planning is based on a ward size of 25 to 30 beds, 28 beds being sometimes recommended as a compromise between nursing requirements and economy. Following the recent job-analysis of nursing carried out by a team sponsored by the Nuffield Provincial Hospitals Trust and the experiments in nursing sponsored by the Ministry of Health's Standing Nursing Advisory Committee, a new approach to nursing organisation is developing. This approach is based on the idea of group case assign-

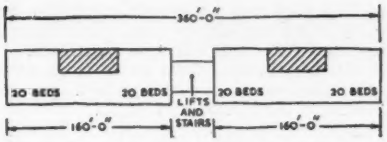

Fig. 4.—Arrangement of four 20-bed nursing units to give 80 beds on one floor.

ment. Under this system of nursing, a group of beds forming a nursing unit is made the responsibility of a nursing team, led by a trained nurse, several such units being grouped together into a larger administrative unit under a sister. This approach has revolutionary repercussions for ward planning, and the Investigation's experimental ward buildings in Scotland and Northern Ireland have been designed with this form of nursing in mind. The Scottish example is based on a nursing unit of 16 beds and that in Northern Ireland on a nursing unit of 20 beds. Fig 4 shows how four 20-bed units can be grouped on a floor, giving a total of 80 beds. This 80-unit need be no greater in length than would be a block containing a pair of "traditional" wards housing perhaps 56 beds. The extra accommodation can be obtained partly by compact planning and partly by increasing the thickness of the building. That greater thickness is practicable from the point of view of ventilation and daylighting has been shown by studies made at the Building Research Station.

For a hospital of given size, an increase in the number of beds per floor reduces the number of floors, and thus the total height of the ward block. For example, in Fig. 5 both blocks contain the same number of beds; one, which has 28-bed wards, is ten storeys in height, the other, based on the Musgrave Park plan, is only seven. Of the two, the seven-storey block would cost considerably less to build, and since it has three floors less there would be a reduction in lift stations, service

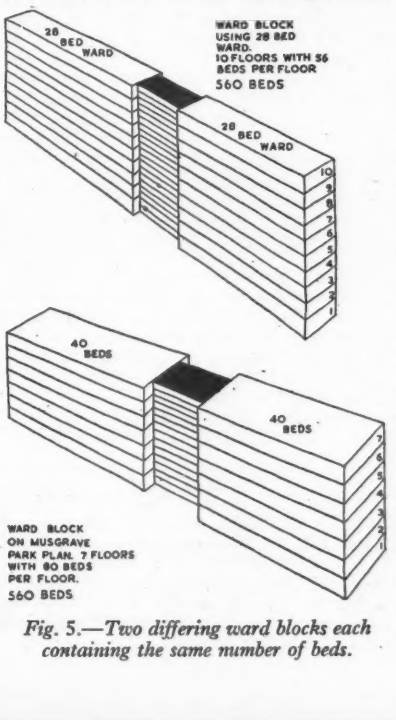
28 BED WARD
WARD BLOCK USING 28 BED WARD. 10 FLOORS WITH 56 BEDS PER FLOOR
560 BEDS
28 BED WARD
40 BEDS
40 BEDS
WARD BLOCK ON MUSGRAVE PARK PLAN. 7 FLOORS WITH 80 BEDS PER FLOOR.
560 BEDS

Fig. 5.—Two differing ward blocks each containing the same number of beds.

points and service rooms. Being more compact, it provides more floor space per sq. ft. of external wall and is cheaper to heat.

Apart from the economic advantages, the ability to place more beds on each floor increases the designer's freedom in the choice of building form. For example, arrangement B, Fig. 2, is often the most desirable. In practice its use is limited by the fact that if the requisite number of beds is provided a building exceeding an acceptable height may result. If so, the designer will be driven to accept other arrangements less satisfactory from the point of view of amenity or circulation. If, however, he can get 80 beds instead of 56 on each floor, he can accommodate many more beds within a given height limit and he may often find it possible to use arrangement B where he would not be able to do so with traditional ward planning. Similarly, the more compact ward plan reduces the spread of single-storey layout. Fig. 6 shows a comparison

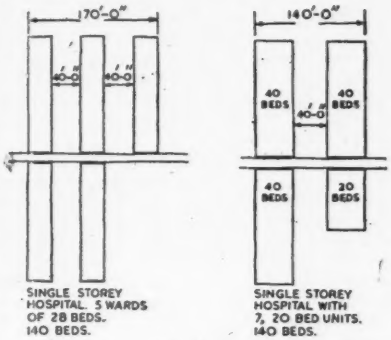

Fig. 6. — Single-storey layouts compared.

between two units of 140 beds, one based on the conventional ward of 28 beds and the other on the 20-bed unit, similar to that used at Musgrave Park Hospital.

DAYLIGHTING

Daylighting must be taken into account in considering the shape for the ward block and its relation to other buildings on the hospital site. Strong daylight has a bactericidal effect, promotes cleanliness and makes for a pleasanter atmosphere in the hospital. It has been suggested that the daylight factor should not be allowed to fall below 2 per cent. at the back of a ward. It seems reasonable to regard this as the minimum standard for all parts of the hospital. If, owing to the design of the hospital, the view of the sky is obstructed by other parts of the ward block or by other buildings, daylight penetration into the rooms will be reduced. In these circumstances good daylighting will require the use of larger windows or shallower rooms or both. From the daylight point of view therefore arrangements such as type D in Fig. 2 are undesirable. Still more undesirable is any form of enclosed light well.

On the whole, studies made by the Investigation indicate that in an acute general hospital, patients' bedrooms need not necesarily be given priority in sunlighting over all other accommodation. The large proportion of ambulant cases to be expected to-day means that many patients will spend much of their time not in bed but in a day-room. Those who are

acutely ill will probably not benefit greatly from bright sunlight, and indeed might prefer shade. The average length of stay in an acute general hospital is now usually so short that it is really no serious hardship if it is not passed in a south-facing room. On the other hand nurses, technicians, medical staff and others may spend the whole of their working life in a hospital and it is undesirable that the rooms they work in should face north or be in permanent shadow. It therefore appears that a broader view should be taken of orientation in hospital design, and that the aim should be reasonable standards throughout the hospital rather than that the patients' bedrooms should face south at the expense of the rest of the hospital.

FLEXIBILITY IN DESIGN

It has sometimes been argued that the accommodation required in a ward building is likely to change so rapidly that the internal walls should be made demountable so that they can easily be taken down and re-erected in different positions. Generally, any attempt to provide for a high measure of flexibility by changing the walls and services in a building is likely to be very costly and can only be justified if there is a reasonable certainty of substantial changes being made at frequent intervals.

It is therefore worth considering in some detail what sort of changes are most likely to be wanted in wards. It appears that the requirements of ward planning change with somewhat less rapidity than do those for many parts of the hospital. Wards built 100 years ago are still in use to-day, with minor alterations. Though inconvenient, they are still usable and patients are still being nursed in them. In this the ward may be contrasted with other parts of the hospital, where buildings of similar age have often been found wholly inadequate for present-day purposes and have had to be drastically remodelled. The reason for this contrast lies in the function of the ward. The majority of the nursing needs for a sick human being are unchanging. He must have a bed, there must be space round it for the nurse and the doctor to attend to him, and there must be facilities for his toilet and for feeding him.

While the needs for a sick human being and hence the space and services required in a ward may not change very rapidly, we must expect considerable changes to take place well within the life of a hospital building in the number of cases requiring admission from a given population, and still more in the proportion of these cases as between the different specialties. These changes can, however, be provided for by the right approach to planning and do not necessarily call for frequent alterations to the fabric of the building. In the first place wards should be designed to be suitable so far as possible to house all type of patients. With the exception of children and maternity cases there is no reason why the same ward plan should not be used for all departments in an acute general hospital, so that accommodation can be switched from the use of one department to another without structural change. This will also facilitate the temporary allotment of beds to meet seasonal fluctuations in demand. To ensure that the beds are so far as possible interchangeable between the different departments, the ward block should be sited so that all wards have equal access to the theatres, radio-diagnosis and other special facilities for diagnosis and treatment.

Mr. Davies then went on to discuss the requirements of the out-patient department and the operating theatre.

CONCLUSION

The foregoing discussion derives from my experience as a member of a research team which included a doctor, a nurse, a medical historian and others. Perhaps the most important single lesson learnt from this experience has been that hospital design problems can only be solved by this sort of co-operative thinking. While research such as that on which I have been engaged can contribute general ideas and methods of approach, every hospital is and must remain an individual problem in design.

In this connection I would like to stress the importance of the stage which precedes that of design—that is, when the programme is being drawn up. It is at this stage that the success or failure of most hospital projects is determined. It should be entrusted to a small group of senior people, and in the case of hospitals of any size some at least of them should be able to devote a major part of their time to the work. Too often in the past the drafting of a hospital programme has been thought of by hospital authorities as something which could be accomplished at odd moments by an officer already burdened by routine duties. A slipshod programme is likely to result in enormous waste of effort and money, disappointment for the hospital authority and frustration for the architect, who is driven to prepare schemes which later must be drastically re-modelled or even abandoned when the inadequacy of the programme is discovered. Hence time and money spent at the programme stage is very well worth while.

The time involved will naturally depend on the size of the project, but for a hospital of any size it may well be one or two years. It may be necessary to carry out a survey to discover the demand, as was done for the new hospital at Dundee, and it will certainly be necessary to collect statistical information as to the working of the existing institutions which the new hospital will supplement or replace. It will be necessary to investigate waiting lists and to measure the time taken in carrying out the various services which the hospital is to provide.

The programme should not be thought of as something prepared by the hospital authority and then handed over to the architect to design from. Co-operation between the architect and his hospital colleagues should be continuous at all stages. The architect has a contribution to make at the programme stage and he needs the help of the doctor, nurse and hospital administrator while he is developing the design.

BUILDING WAGES

Operatives' New Claim

A CLAIM for a wage increase of 4d. an hour for all building trade operatives, which would cost the industry about another £40m. a year, will be heard in January by the National Joint Council of the Building Industry. The claim was decided on last Friday at a meeting in London of the executives of building unions.

SOCIETIES

RIBA

Notes from Council Minutes

THE following are notes from the minutes of the RIBA Council meeting held on October 12:—

Sir Arthur Stephenson, CMG (F), Royal Gold Medallist 1954, attended the council meeting and gave a short address to members.

Ministry of Works Building and Civil Engineering Regional Joint Committees.—It was reported that the Minister of Works had under consideration the future of the regional joint committees and in the meantime had decided to extend the period of appointment of existing representatives until further notice. These appointments were due to lapse on September 30, 1954.

Exhibitions. (*a*) *The Artists' International Association.*—The council approved a proposal from the Artists' International Association that an exhibition designed to appeal to those in a position to give patronage in the arts in such fields as local government, education, industry and hospitals should be shown at the RIBA in the late spring of 1955. The exhibition will include designs for murals, panels, sculpture, stained glass, paintings and graphic work.

(*b*) *Contemporary Australian Architecture.*—The council accepted with appreciation the offer of the Royal Australian Institute of Architects to prepare an exhibition of contemporary Australian work for showing at the RIBA early in 1956.

The Nuffield Foundation: Fellowships for Architects.—The council were informed that the trustees of the Nuffield Foundation had decided to establish two fellowships for architects, tenable for a period of two years, with the object of extending facilities for post-graduate work and research at universities. The selection committee convened by the Nuffield Foundation would include Sir William Holford (F), and it was suggested that Dr. Leslie Martin (F) should represent the architectural profession. The council welcomed this decision and it was agreed that Dr. Leslie Martin (F) should act as representative of the profession.

Building Research Programme, 1954-1955.—The Ministry of Works having asked for the Royal Institute's comments on the draft Building Research Programme for 1954-1955, it had been left to the science committee to study the matter and prepare comments. Approval was given to the science committee's comment approving the draft as a comprehensive programme but suggesting the need for more investigation into the problems of building for low-temperature storage in regard to both soils and materials; and also the need to expedite research work by all possible means in view of the rapid expansion of the national building programme.

IAAS

Formation of Kent Chapter

A SPECIAL MEETING of the Wealden branch of the Incorporated Association of Architects and Surveyors, was held at Tunbridge Wells, on October 7, when the meeting considered the formation of a chapter within the branch for the benefit of members in the Tunbridge Wells, Tonbridge and Maidstone areas. The proposal was unanimously carried, and the chapter is to be known as the Kent Chapter.

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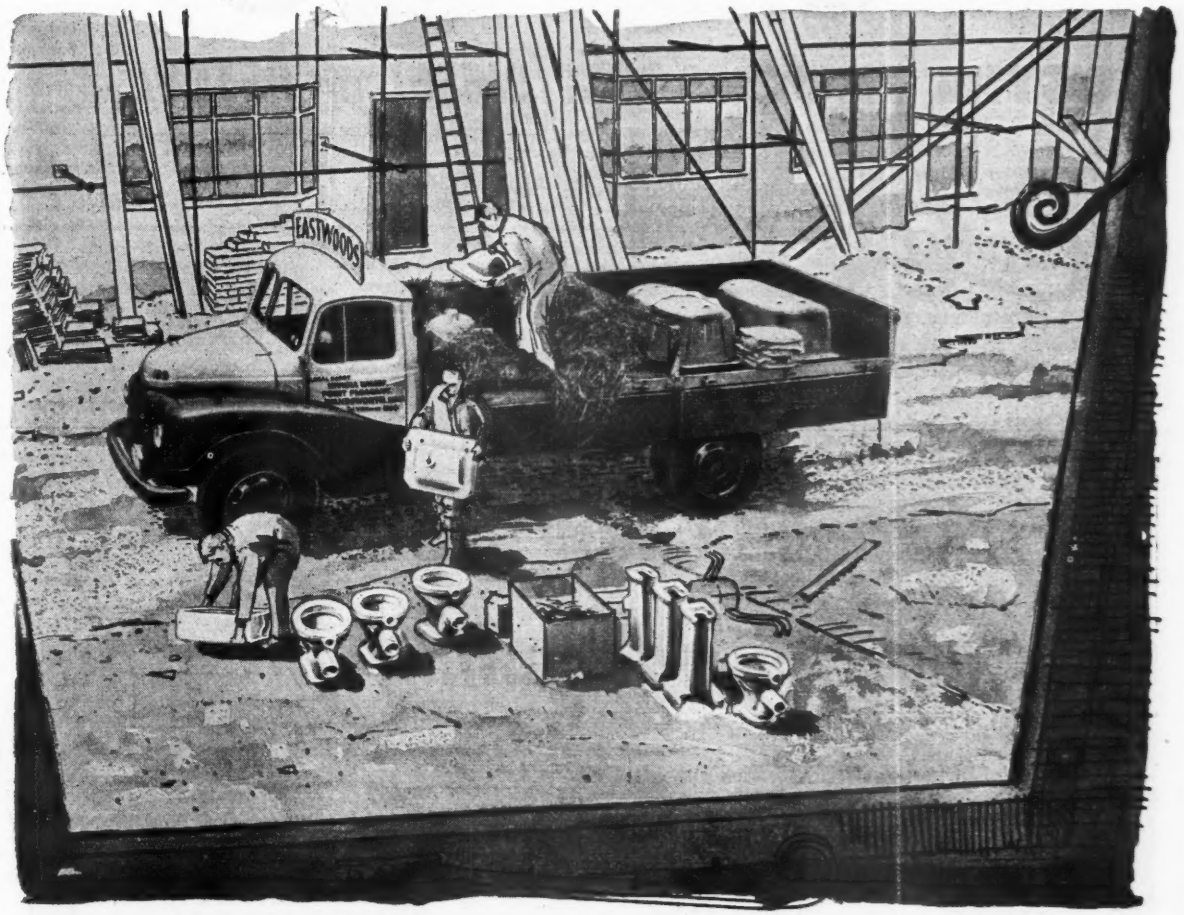

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ARCHITECTS' REGISTRATION COUNCIL

Ninetieth Ordinary Meeting

AT the 90th ordinary meeting of the Architects' Registration Council of the United Kingdom on October 15, it was reported that there were 346 retention fees unpaid, and seven payments of 10s., etc., only. The corresponding figure for 1953 was 374 and seven payments of 10s. only; and for 1952 it was 325 and eight payments of 10s. A list of those architects whose fees remained unpaid was circulated at the Council meeting, held under the chairmanship of Mr. Denis Poulton, FRIBA, at 66 Portland-place, W1, and their names are to be struck off the register failing payment by November 15, with the exception of those architects registered overseas, who are allowed until the end of the year in which to pay.

The accounts and balance-sheet for the half-year ended June 30, 1954, were submitted by the Finance and General Purposes Committee, and approved by the Council.

A total of 111 applicants who qualified by examination under Section 6 (i) (c) of the Principal Act were admitted to the register, and six were readmitted who qualified under Section 6 (1) (d) of the Principal Act, and under Regulation 26 (a) (3) Architects resigned seeking re-admission. The total number of applications received under the 1938 Act and Regulations 26 (a), (5), (7) and (b) was 5,633. Of these, 3,973 were recommended for admission, 1,455 rejected and 205 applications had been withdrawn.

MR. P. G. FREEMAN, chairman of the Board of Architectural Education, reported on emergency decisions regarding maintenance scholarships taken by the Board under delegated powers since the last meeting. The tuition fees at the Architectural Association School of Architecture were to be increased from £120 per annum to £150, and it was recommended that the ARCUK grant of one-third fees for students at that school be accordingly increased by £10. This was approved by the Council.

The Professional Purposes Committee reported that they had considered a request from the National Association of British Chambers of Commerce that the names of architects who are members of a chamber be permitted to appear in the general list of members, as distinct from the classified list, followed by their professional affixes and the word "architect." The committee had received an assurance from the association that no specific charge would be made for the insertion of the name and that none of the Year Books of the chambers of commerce would contain any suggestion that members of the chamber would be well advised to consult and have dealings with other members of the chamber. The Council approved the proposal.

The committee also reported that their attention had been drawn to a letter signed by an architect who was consulting architect to a firm of building manufacturers, soliciting orders on behalf of the firm. The architect's attention had been drawn to the matter, and he had replied, admitting his error and apologising for the mistake. In the absence of all the senior members of the firm he had signed a letter without reading it on the assurance that it was only a routine letter.

A complaint had been made that a firm of architects and surveyors were sharing premises and using the same letter paper as a separate firm of surveyors, land agents and valuers. It appeared that in the first firm there were two surveyor partners in addition to an architect, and that the former had set up a separate firm of surveyors in order to be able to use the title "chartered surveyors." Both firms had been originally one. The surveyors firm were land agents in the sense of being managing agents for estates and did not carry on business as house agents. The committee considered that it was very desirable that the two firms should have separate letter-paper, and the architect concerned was to be informed accordingly.

The committee had also considered the use of the title "assistant architect" by unregistered persons internally in a borough engineer's department of a local authority, and had caused a letter to be sent to the borough engineer, pointing out that the use of the title internally may or may not be an offence, which could only be determined after a case had come before the courts, but that in any case this use of the title was bound to lead to the risk that sooner or later the title would be used by one of the persons concerned in communication with the public.

Three cases of offences under the 1938 Act were awaiting prosecution, and warning letters had been sent in three other cases. In one further case, which had been reported to the Royal Incorporation of Architects in Scotland (the Registration Council having no power to prosecute in Scotland), the Lord Advocate's department had decided not to take any action.

Referring to the revision of the Code of Conduct, the committee said that the recommendation of their sub-committee had been approved. A copy of the revised draft code was submitted to the Council for consideration.

HOUSING OUTPUT

"Present Rate Too High"

CURRENT rate of house-building nationally was above that envisaged by the Government when they launched their programme, said MR. M. TETLOW, Regional Officer, Minister of Housing and Local Government, speaking at the East Riding rural housing advisory committee at Beverley, Yorks, on October 7.

The number of new houses built this year was expected to be above 350,000 and next year was certain to be approaching 400,000, he said. This was too big an output having regard to materials and labour available and to other calls on the nation's resources. The Government intended to put a brake on housing production by local authorities to bring the total between 300,000 and 350,000 per year.

The Government were anxious to start on a new aspect of housing work and wanted to tackle the main problem of slums. There might be more legislation, but there would no longer be housing allocations from regional offices as before. Housing authorities would place their proposals for house-building before the regional officer for his approval.

TOWN PLANNING DECISIONS

Southborough House Development

THE appeal of London and Home Counties' Property Investments, Ltd., against the refusal of the Kent County Council to grant them planning permission to construct roads and houses at Camp Field, Great Bounds Estate, Southborough, has been considered by the Minister of Housing and Local Government.

The Minister states that he appreciates that this is a proposal to complete the development of the Great Bounds Estate. He feels bound, however, to agree with the Council that owing to the physical features, any development on Camp Field itself would be unduly conspicuous, and would affect the landscape and amenities of the area.

These objections, continues the Minister, do not apply to the piece of woodland north of the footpath, and he agrees with the Council that development of this area could reasonably be permitted without detriment to the amenities. He therefore grants permission for the construction of roads and houses north of the footpath, but refuses permission for the development of the remainder of the land.

Fullers' Earth Extraction at Nutfield and Reigate

AN APPEAL by Fullers' Earth Union, Ltd., against the refusal of the local planning authority to allow them to extract fullers' earth, by open-cast and underground mining methods, from further areas of land in Nutfield and Reigate, has been allowed by the Minister of Housing and Local Government, subject to the following conditions:—

(i) The programme of operations, to be agreed with the local planning authority or, in default, determined by the Minister, shall include provisions for securing that the land is restored to the greatest extent possible to a level and condition suitable for the resumption of normal agricultural operations with provision for the suitable treatment of such parts of the area as the programme does not require to be restored.

(ii) Surface soil removed during the course of mining operations shall be stripped separately and stored for eventual respreading over the surface of the land. All overburden and waste materials removed are to be disposed of within the excavations.

(iii) All plant and machinery installed in connection with the working of minerals or the restoration of the land, other than fixed plant and machinery comprised in a building, shall be removed at such time or times as may be agreed with the local planning authority and the land thereafter shall be left in a tidy condition.

BOOKS RECEIVED

MODERN PRACTICAL BRICKWORK. By William Frost and R. V. Boughton. (London: B. T. Batsford, Ltd.) Price 50s.

ARCHITECTURAL HYGIENE OR SANITARY SCIENCE AS APPLIED TO BUILDINGS. 9th Ed. By Sir Banister Fletcher and H. Phillips Fletcher. (London: Sir Isaac Pitman and Sons, Ltd.) Price 25s.

HOUSES OF TO-DAY. By Colin Penn. (London: B. T. Batsford, Ltd.) Price 30s.

SIMPSON'S HISTORY OF ARCHITECTURAL DEVELOPMENT. Vol 2. By Cecil Stewart. (London: Longmans, Green and Co.) Price 30s.

Paddington High Flats Public Inquiry

THE LONDON COUNTY COUNCIL'S CASE

[From A Special Correspondent]

AT Paddington Town Hall the public inquiry was continued last week into the appeal by the Paddington Borough Council against the refusal of the LCC to allow the erection of three 15-storey point blocks of two- and three-bedroomed flats, to be known as Perkins Heights, on a three-acre site adjoining Paddington Green. The LCC had refused to give planning consent on the grounds, among others, of excessive density and unacceptable design and because they had allocated the major portion of the site for the future erection of a county college.

The inquiry, the opening stages of which were reported in our last issue, is being conducted before Mr. J. D. Hossack, an Inspector appointed by the Minister of Housing and Local Government.

The case for the Paddington Borough Council having been concluded, MR. HAROLD MARNHAM addressed the Inspector on behalf of the LCC. It should be made clear, he said, that the LCC were not opposed as a matter of principle to high buildings. Indeed, provided that the design was satisfactory, not only did they favour point blocks of flats in a few selected areas, but in at least one such area they had themselves constructed such a block.

QUESTION OF PRINCIPLE

This appeal, however, raised a most important question of principle and undoubtedly, if the appeal were allowed, it was likely to have the widest possible repercussions. But it was not so much the principle of high building which was involved as that of decentralisation. The County of London Development Plan was based on two long-recognised principles which were clearly enunciated in the Barlow Report. The first was that the overall growth of London's population should be restrained and the second was that a planned programme of decentralisation should be put into effect. The proposal of the Paddington BC was, it seemed to the LCC, the clearest possible challenge to those principles. They were seeking in the midst of a thickly populated area to house on a comparatively small site not about 450 persons, which the LCC said was right, but as many as 1,097. The area was already gravely deficient in the provision of open spaces and that situation could not fail to be aggravated if the Borough Council's scheme was permitted .

The LCC took the view that their duty in considering the redevelopment of the area was not related merely to the question of housing, but was concerned with all those other facilities and amenities which were necessary for the happy and satisfactory living of persons in the area.

In his submission it was a retrogressive step to increase the numbers of people living in this area to the extent proposed by the Paddington BC, and the first major issue which was in dispute, therefore, related to numbers of persons. The second concerned the design of the proposed flats. In the opinion of the LCC the design put forward was in itself fundamentally unsatisfactory in that a large number of the flats would receive inadequate sunlight. In addition, continued Mr. Marnham, there were at least three other important matters involved, although they did not perhaps carry quite the same weight as those he had already enumerated. The first was the fact that by carrying out this proposed scheme a considerable number of houses in good condition would have to be demolished. In the absence of the strongest possible reasons, that seemed a most ill-advised and unnecessary step. The second matter of importance was the fact that a part of the appeal site was at present defined as a site for a county college. The final matter which was seriously in dispute concerned the appropriateness of the proposed development, having regard to the relationship in which it would stand with surrounding buildings.

Evidence was then given by MR. A. G. LING, ARIBA, MTPI, Senior Planning Officer in the Architect's Department of the LCC, who dealt at considerable length with the various grounds upon which his council opposed the erection of the proposed flats. First, he said, the scheme would involve the demolition of a number of houses in St. Phillip's-place, Church-street and Hall-place which were in reasonably good condition both inside and out. Turning to the question of density, the witness said that when the County of London Plan was prepared, one of the first considerations was the kind of living conditions which Londoners should have. It was felt that in the central areas which were zoned at 200 persons to the acre there should be flats, and flats and houses in the areas zoned at 136 to the acre. The appeal land was sited in a zone of 136 persons to the acre, and the LCC would therefore like it to contain a proportion of houses and maisonettes, with gardens, for the larger families. The LCC were not opposed in principle to high buildings in certain cases, but the kind of areas they favoured for tall blocks of flats of higher densities were those such as Putney Heath and Wimbledon Common, where there were extensive areas of open spaces around.

POPULATION TRENDS

In 1931 the population of Paddington was approximately 145,000, and the 1951 census figure was 125,463, a drop of some 20,000 in a period of 20 years. Since 1951 the population had continued to go down and now stood at 123,800. If that trend went on in future years the population in 1971 would be about 103,000, which was in fact the figure stated in the County of London Plan. The point he wished to make was that the process of decentralisation was no new trend in Paddington, but had been going on for the last 20 years. His council took the view that the New Towns had been specifically provided for dealing with the overspill population, and 50,000 persons had already been housed in them. Further houses were now being erected at the rate of 10,000 a year, and that figure was increasing. It therefore seemed to him to be wrong to start the process of increasing densities in the central areas on the basis that the New Towns policy was going to fail or prove impracticable, as Mr. Jensen, he thought, had suggested.

MR. LING was examined at great length on the question of the sunlighting of the flats, in connection with which he put in a large number of diagrams. In his view, the high density of the scheme contributed directly to the absence of sunlighting in some of the flats. One at least of the blocks as planned was bound to have only a small amount of sunlighting.

Questioned about comparative costs of construction, the witness produced calculations showing how he had arrived at a figure of £2,431 per dwelling for the Paddington scheme, compared with £1,900 for the LCC's point blocks of the square type at Roehampton. For LCC four-storey blocks of maisonettes at Roehampton the figure was £1,650 per dwelling, and for their five-room two-storey houses in the same area £1,450. On the basis of cost per room, the figures were: Paddington scheme, £725; LCC point blocks, £633; maisonettes, £412; houses, £290.

On grounds of economy, said Mr. Ling, there had to be a good reason for building point blocks; at Roehampton and Putney Heath the good reason had been the need to leave more land free for maisonettes and two-storey maisonettes with gardens where the larger families could live.

HOUSING DENSITIES

In closing his evidence Mr. Ling said that the LCC took a serious view of the Paddington scheme, regarding it as a possible challenge to the density proposals in the County of London Development Plan. The minutes of the meeting—in December, 1953—at which the scheme had been discussed by the Borough Council, contained the following sentence: "It appears to us, therefore, that the only solution of the problem so far as the Borough Council is concerned, is an increase in building density in suitable *places*." He asked the Inspector to note the use of the plural.

It was felt that if this application were granted it would be the forerunner of many more applications from all over the county. It was feared that housing densities might be allowed to "run riot" and that it would be impossible for the Planning Authority to provide the extra parks, schools and other social services which were necessary to achieve properly balanced development. The whole decentralisation policy of the LCC and the Government would be undermined. It was the LCC's hope that the Borough Council would think again and support views previously expressed by Mr. Jensen when, at the public inquiry into the Development Plan, he said that there ought to be organised close liaison between the Metropolitan Boroughs and the new towns and expanded towns to provide an outlet for the overspill of population from the central boroughs.

His own feeling was that the housing authorities in the County of London had not as yet a sufficiently close liaison with the new towns. It was the LCC's wish to build a new town themselves, so that as a housing authority they could say that they had made a direct contribution to the solving of the housing problem. Similarly they would have liked to see Paddington Borough Council building perhaps a neighbourhood in a new town.

Under cross-examination by Mr. Derek Walker-Smith, Mr. Ling said that in his view the Paddington scheme was based on the anticipation of the complete collapse of the new towns and expanded towns policy.

MR. WALKER-SMITH suggested that the Borough Council were facing realities, while the LCC were tied to their anticipations, which were unhappily proving incorrect, regarding the housing of London's overspill.

The inquiry was closed and the Minister's decision will be made known in due course.

American Housebuilding in Transition

4—PERFORMANCE OF HOUSEBUILDERS (*continued*)

We continue our extracts from "Housebuilding in Transition," by Sherman J. Maisel, Associate Professor of Business Administration at the University of California, published in England by the Cambridge University Press.—Ed.

GROWTH OF EFFICIENCY

THE growth of efficiency in housing has followed four separate paths. First, there has been a general increase in mechanisation and improvement in the techniques used at all levels. Second, cost reduction has been achieved by the moving of a larger share of production off the site and into plants, where lower costs are possible through better controls and deskilling of labour. Third, cheaper financing and easier selling have made savings possible. Fourth, the greater specialisation engendered by increased scale has cut costs.

All builders have introduced greater mechanisation into their construction process. Small power hand tools have been perfected and used for an increasingly large number of operations, thus cutting down the units of labour required. At the same time, more attention has been paid to the efficient planning of the entire construction process, with even the smallest firms attempting to use procedures and techniques with the lowest costs.

The pushing back of the production process from the site into the mill or factory has meant that many assemblies formerly produced by craftsmen with hand tools are now manufactured under factory conditions and arrive at the house in a nearly finished state. Steel and aluminium windows, complete with glazing and screens, are a good example of this type of item. In addition, the use of more completely finished materials that are simpler to install has increased. The advantages of dry walls and tile floors fall into this category. The result of these changes has been to make the builder increasingly an assembler rather that a fabricator.

Finally, there are savings due to the increase in the size of builders and their assumption of responsibility for the complete housebuilding process. The rapid increase in demand which characterised the war and postwar periods became the most powerful force behind the industry's progress. And this progress manifested itself most significantly in the strong trend toward merchant building and the concentration of production into the hands of large firms, run often by shrewd successful businessmen exploiting a new mass market. The largest firms employed 40 or 50 people spending full time on management and executive functions—a far cry from the small firm whose owner performed all overhead duties himself in his spare time. Managements of this size can enjoy the benefits of specialisation within themselves and have been able to evolve better financing and land development methods as well as production techniques. The improvements and cost reductions realised through bulk purchasing and better relationships with sub-contractors have already been stressed. Most important of all has been the greater degree of rationalisation of the production process.

"Rational" organisation of the work force tends to be self-reinforcing. Specialisation leads to greater efficiency and increased volume which, in turn, make possible the use of more repetitive and routine operations. Increased mechanisation begins to pay dividends as tools can be kept in more constant use and their cost per unit of output falls. Inclusion of standardised product elements, such as precut or preassembled components, becomes more feasible with expanded output. Standardisation, too, allows extensive employment of patterns and templates and various work-holding or work-positioning devices to reduce work effort. At the same time that direct productive efficiency is increased, the opportunity arises for more effective use of the supervisory force through tighter job scheduling, decreased necessity for direct supervision by major executives, and higher worker-supervisor ratios. Last, but not least, it becomes worth while to utilise more rigorous accounting procedures in conjunction with other management controls (such as production and inventory controls) so that costs are known in the fine as well as the gross, so that cost standards can be set up, and so that concrete information for making decisions is available.

AVERAGE FIRM INEFFICIENT

The growth in size of housebuilders brought about far less improvement in management than might have been expected. The average firm is still not run efficiently, and the contrast between good management and average management in every size class is great. Perhaps this lag is not surprising in view of the rapid and incomplete transition just gone through by many housebuilding firms, which mushroomed from businesses spending next to nothing on management to operations requiring and able to afford a high degree of managerial skill. The development was so rapid that it was next to impossible to meet the requirements for good management. Not only was there a shortage of men with the necessary knowledge and talent, but the executives of the rapidly expanding firms were primarily concerned with entrepreneurial problems. They frequently did not have either the time or the necessary background and organisational skills required for efficient operation of their firms. Furthermore, no external impetus toward better organisation was provided by competition, during the period, and, consequently, development has been slow.

The greatest management weaknesses seem to lie in the realms of cost data and research and in a failure to re-examine the over-all problems of the organisation and functions of the firm.

(1) Perhaps most important has been the failure to develop adequate record-keeping and methods of production control. Management has remained on a very personal basis. Scheduling has been too often hit-or-miss, and knowledge of what actually occurred during the production process has been haphazard and loose. Many of the advantages of specialisation, which firms in other industries are quick to exploit, have been neglected through inertia and ignorance.

Weaknesses of this kind in management are difficult to measure. Since no two industries function alike, interindustry comparisons are suspect. Our belief that housbuilding has proceeded only part way toward comparative management efficiency is based not on an ideal borrowed from other fields, but rather on comparison among building firms in the San Francisco area. Even among the big firms, wide differences exist in methods of planning, controlling, and supervising production. The majority had no adequate cost accounting or production controls. As a result, their efficiency was lower; they received less output for their labour expenditures and wasted more of other production items than a few firms with better management.

Housebuilding firms have accurate records of their total costs, but have failed to break them down to show the costs of specific parts of their operation. Many examples can be found where builders in the area have not known whether or not they should adopt a specific technique because they had no way of comparing relative costs. Consequently, many innovations are adopted only by those with the best information and may later be copied by others if they appear to bring about savings.

(2) Related to this lack of knowledge about costs has been the failure of firms to re-examine their complete job organisation and to introduce new methods and materials. It is true that large builders have emphasized standardisation, simplification, and the logic of their production processes to some extent, but on the whole, the field has received far less attention than is its due. If builders knew more about their actual costs in terms of components and individual sections of the house, as compared with their present knowledge of what they spend for materials, labour, and trade contracts, they might find it advantageous to modify and revamp their whole construction process to a great degree.

New procedures have been developed in the most efficient firms, and it is probable that, in time and with more intensive competition, more effort will be made to develop management skills by all firms in the industry; otherwise many may fall by the wayside. If the gap can be closed between the best-run firms and the average firms, the entire efficiency of the industry will be greatly improved. More important even than the acquiring by inefficient firms of the techniques already in use is the development of new management methods and skills by all.

The obvious reluctance of large firms to increase their overhead has been a major drag on progress toward better management. Expanding overhead has meant taking additional risks, which firms have naturally been hesitant to do unless forced by competition or led on by hopes of much larger profits. Unlike many manufacturing industries, where expanding firms can find already developed successful techniques to incorporate into their own overhead, housebuilders have no assurance that money spent in expansion will not go down a rathole.

(To be continued.)

METHODS OF TRAINING

The Need for a Liberal Education

A PRESIDENTIAL address was given to the Institution of Structural Engineers on October 7 by Dr. S. B. Hamilton, MSc, ARCS, MICE, at 11, Upper Belgrave-street, SW1. The following extracts have been taken:

The most reliable form of examination is one in which a candidate is called upon to show whether or not he can perform with the necessary skill certain operations which will be part of his job. In such a test actual marks are unimportant; but, if given, the standard for a pass must be high. Many examinations do not directly test any applicable skill, but rather the progress made in the attainment of basic knowledge. An interview by a single examiner may be more intimate than one conducted by a board; but it leaves the candidate's fate in the hands of one man. There are also psychological tests which have proved valuable as aids to the selection of officers in the fighting services. So far, to the best of my belief, they have not been tried by any professional institution. It would seem that, with all their faults, we must continue to set written examinations, which could be supplemented by the record of a candidate's work as a student; and in this respect an internal examination has the advantage over an external.

It is perhaps vain to discuss the relative merits of alternative means of schooling unless one is clear as to the ends which that schooling is expected to serve. The object of primary education is to condition the child to that form of superficially civilised life which his elders prefer. The aim of secondary and higher education is to enable him to earn a good living, and to take his place as a citizen. As individual aptitudes vary widely both in nature and quality, it is a matter of immense importance that the right person should be trained to do the right job—and trained in the most expeditious way.

At the present time, and indeed for many years to come, industry and the profession, especially that of teaching, will absorb every capable scientist, technologist and technician who can be trained. There are also many highly administrative posts which should be filled by men with advanced knowledge of science or technology, but which are not so filled because of doubt as to whether such men have the breadth of outlook required of administrators. There is a crying need that men with the very best brains should be selected and trained in science or technology, and a grave danger that because far too few graduate teachers of science in sixth forms are available, the supply of technologists and scientists may be strangled at its source.

THE STUDY OF HISTORY

Scientists and technologists cannot be adequately trained on concentrated doses of science and technology only. All science and technical courses need humanising. Some teaching institutions have attempted to do this by inserting in the curriculum such subjects as English literature or philosophy. It is doubtful whether such insertions will meet the needs. One line which appears to be much more promising is the study of the history of the main subjects of the course. Almost any student of any subject can have his curiosity aroused by historical questions, the answers to which explain what he does now in his own job, and why he does it in a particular way. It is not suggested that history should become a subject for examination for engineers; but its introduction as a subject of study could have far-reaching beneficial consequences and go far to provide the liberal element in technical courses.

Instruction and study, however well conducted, can never make an engineer; nor can scholastic success (or its lack) be taken as proof that one man will make a good engineer, and another will not. Experience in the shop, the field and the drawing-office, and ability to profit by the human contacts they bring, are equally necessary and important. In judging the suitability of an applicant for corporate membership of the Institution, his practical training and the first steps towards his career are therefore considered equally with his academic success. The Membership Committee always bear in mind that we want to welcome as many new members as possible, but that, in fairness to those already in, and to the public, the Institution's stamp must not be placed on anyone likely to prove unreliable.

IMPROVEMENT GRANTS

Mr. Marples's Call to Property Owners

OPENING A DEMONSTRATION at Bedford, on October 12, showing the conversion of a large semi-detached house into three self-contained flats, Mr. E. Marples, then Parliamentary Secretary to the Ministry of Housing and Local Government, said that he believed it had been computed that if every house in this country were fully occupied, but not overcrowded, there would be no housing problem to-day, but the fact remained that they in this country built to last, and five million of their houses were over 65 years old. Some of these houses were a pride and joy to look at, for they included some of the best architecture in the country. Others, equally well built, were deteriorating for want of capital expenditure.

"We are offering a lifeline to owners of older houses," Mr. Marples continued. "We are saying to them: 'Take a grant, take a gift of money, put some money to it yourselves, and put your older houses in order.' Here at Bedford are two 12-room houses built 60 years ago and quite unsuitable to-day for one average family. Bedford Council is making three flats out of each of them. They estimate that had a private owner converted them the cost would have been about £400 each, of which the owner could get up to £200 each in grant."

"It was a very practical proposition from Bedford Council's point of view, said Mr. Marples, because had they built three council houses the cost would have been about £3,900. It was also a sensible proposition from the point of view of the houses themselves, and from the point of view of the nation. The houses gained a new lease of life, and three homes were economically produced from one house.

"I say to all owners of older houses such as these," Mr. Marples concluded, "this is your chance. Don't let your older houses go downhill towards decay. Take the money the Government is offering. It is the chance of a lifetime both for yourselves and for your houses."

FACTORY "COLONIES"

Birmingham Manufacturers' Scheme

THOSE Birmingham manufacturers anticipating the loss of their premises under the Corporation's re-development plans have elected a steering committee to work out practical details of a scheme suggested by the National Union of Manufacturers for creating "factory colonies" on the city's ring roads. The decision was taken at a meeting in Birmingham on October 12 of about 150 Midland Area members of the NUM. The steering committee is to ascertain the amount of space required, and in the next two months will prepare detailed plans, with estimates of cost, for submission to another general meeting.

It has been suggested that there should be 16 "colonies," each containing between 10 and 40 firms, which would pay a rental covering the lease of the land from the Corporation and the loan obtained for erecting the factory buildings. Group services such as common canteens and central heating may also be provided. About 700 manufacturers in the five central redevelopment areas are thought to be interested in the scheme, a number of them urgently interested, as they are faced with imminent eviction. Most of them are small firms, but together they could raise a considerable sum. It is considered that a loan would not be difficult to obtain, and that it may be granted as a "reversion" on the compensation which the displaced firms will receive.

Mr. E. Holden, the Union's Midland Area secretary, has estimated that to build factory "colonies" instead of individual factories would save 31 per cent. of building costs, and also save the land—estimated at about two-fifths of the total—which would otherwise be lost at the margins of individual factories. Mr. W. S. Atkins, senior partner of W. S. Atkins and Ptnrs, civil and industrial engineers, is acting as consultant.

BUILDERS' FOREMEN'S DINNER

NFBTE President to Preside

MR. G. W. GROSVENOR, president of the NFBTE, will take the chair at this year's annual dinner of the London Association of Builders' Foremen and Clerks of Works, to be held at the Café Royal on November 2.

The dinner is in aid of the pension fund of the Association and it is the only occasion of the year on which an appeal is made for this purpose.

Mr. Grosvenor has already invited all sections of the industry to give the fund their generous support, and he has expressed the hope that as many builders and their friends as possible will attend the dinner and so help to sustain and extend the aims and objects of this worthy cause.

Inquiries for tickets should be sent to the president of the Association, Mr. F. H. Gregory, 60, Kerridge Court, Balls Pond-road, N1.

REBUILDING THE CITY

Messrs. Howard, Souster and Fairbairn inform us that they are the architects for the following new building projects in the City of London: 9-11, Billeter-square; 13, Fenchurch-avenue; and 30-34, Mincing-lane, and not as described in the list of new buildings and their architects issued by the City Corporation and published in our last issue. The same firm are also the architects for the sites at 24-30 Fenchurch-avenue; 24-29, Rood-lane; and Saracen's Head-yard.

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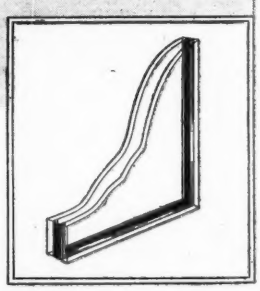

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DG. 13

LMBA

CENTRAL AREA NO. 1

Mr. S. A. W. Johnson-Marshall's Advice to Students

THE importance of the combination of "hands and books" to the future of the building industry was emphasised by MR. S. A. W. JOHNSON-MARSHALL, CBE, ARIBA, Chief Architect to the Ministry of Education, when he presented the prizes to Central Area No. 1 students, under the LMBA's area prize scheme, at a luncheon for the prize-winners and principals of the colleges concerned at Derry and Toms' Restaurant, Kensington, on October 13. Mr. P. E. Trench, OBE, TD, BSc, the area chairman, presided.

Mr. Johnson-Marshall went on to say that the building industry was the most criticised in the country at the present time. However, he felt that this was hardly fair, as people did not compare it with the old-established industries, but with those of more recent date, such as the aircraft industry.

Building is an old industry, said Mr. Johnson-Marshall, and perhaps contained some of the disadvantages of age. It contained people with firm ideas and fewer people prepared to do things in a different way. Not, Mr. Johnson-Marshall emphasised, that the different way was necessarily the right way.

Although we were in need of some new ways of doing things, he continued, the encouraging feature of the building industry was that it was also one of the most self-critical of industries. One heard violent arguments about ways of doing things and while these arguments continued the building industry would, in the near future, also be regarded as one of the "bright boys."

The characteristics required of new entrants to the building industry, Mr. Johnson-Marshall affirmed, were "integrity first and last, intelligence and knowledge and an open mind." An open mind was important, but it was necessary to back this with knowledge. The students were advised, wherever they found themselves in the future, at home or abroad, to "keep up the parallel of books and hands," and this would lead to "an unbeatable combination for industry and the world."

In replying for the technical colleges, MR. D. A. G. REID, BSc, AMICE, AMIStructE, Principal of the Brixton School of Building, looked back to the time when it was only from comparatively few individuals in the building industry that support could be found for the work of the technical colleges. "We in the technical colleges," Mr. Reid continued, "can hardly believe such active support and goodwill from the industry, and are very pleased to have the opportunity of expressing our thanks for this function."

CENTRAL AREA NO. 3

"The Craftsman of To-day"

"MANY people talk about craftsmanship being dead, but I am convinced that the craftsman of to-day is just as capable of doing the work, the difficulty being that he does not have the opportunities," said LIEUT.-COL. W. W. DOVE, CBE, FSA, in his address at the second annual presentation of prizes awarded by Central Area No. 3 of the London Master Builders' Association to apprentices and students in the industry. Mr. W. L. Barker, FIOB, chairman of the area, presided over the ceremony which took place on October 13 at the Drapers' Hall, EC2.

Lieut-Col. Dove, who presented the prizes, told the apprentices that those who made real efforts to become good craftsmen would never be out of a job, and would always be respected by those with whom they came in contact. Wherever they went throughout the world, they would find monuments to the skill of the building industry. Even recently, the discovery of the Temple of Mithras in the City had afforded examples of workmanship which had withstood the attacks of time, and showed that the building industry, even in those days, had one of the highest standards of craftsmanship.

Congratulating the prizewinners, Lieut-Col. Dove emphasised that an even greater prize, which they would come to realise, was to know within themselves that satisfaction with the work completed and the warmth of the knowledge that they had carried it out to the best of their abilities. The apprentices of to-day were the leaders and teachers of the next generation, and consequently had a very great responsibility.

A vote of thanks on behalf of the Area was proposed by MR. R. H. WEBB, MIOB, who agreed that pleasure in one's work was one of the true craftsman's greatest rewards. He thought that though they could not afford to build vast churches these days, nevertheless they could build to the glory of God, the benefit of their fellows and to their own considerable satisfaction.

In seconding the vote of thanks, MR. T. E. SCOTT, CBE, FRIBA, principal of the School of Architecture, Northern Polytechnic, congratulated Lieut.-Col. Dove upon his latest honour, that of Master of the Worshipful Company of Carpenters. Those of them in schools depended greatly upon the encouragement of men like Lieut.-Col. Dove, who had been a member of the governing body of the Northern Polytechnic for 28 years, during which he had given the benefit of his experience in judging work executed by the students. Without the insight of such leaders of industry, the work of education would mean very little.

A vote of thanks on behalf of the guests was proposed by MR. E. L. JONES, MBE, secretary of the National Federation of Building Trades Operatives.

GENERAL FOREMANSHIP STUDIES

Opening of First Certificate Course

A FURTHER advance in the training of general foremen in the building industry was made on October 12, when the first certificate course in general foremanship studies in London opened at Westminster Technical College. This course, which is based on the syllabus recommended by the Standing Committee for the Training of General Foremen, is under the direction of Mr. D. A. G. Reid, BSc, MICE, principal of the Brixton School of Building, who has been a member of the Standing Committee since its inception.

The 20 students attending the course have been specially selected from candidates nominated by their employers as likely to make competent general foremen and they have previously obtained a Full Technological Certificate of the City and Guilds of London Institute in a building craft and an Ordinary National Certificate in building, or equivalent qualifications. At the end of the two-year course these students will sit an examination and, if successful, will be among the first recipients of a certificate of competence in general foremanship studies. The City and Guilds of London Institute are at present formulating arrangements for the examination and the conditions applying to the award of certificates.

The introductory lecture was given by MR. D. E. WOODBINE PARISH, FIOB, chairman of the Standing Committee. Speaking on the nature of management, he said that it involved the organisation, direction and supervision of the work of others. The general foreman was an essential part of management. To be successful, technical competence was not enough. To this there must be allied the ability to organise work and manage men.

Mr. Parish urged students to acquaint themselves with the development of the industry and of industrial relations within it, as without this background of knowledge there could be no proper appreciation of the problems which management had to solve under present-day conditions. Planning, control and co-ordinating work were all part of the management function and each of them raised technical and administrative problems and questions of human relationships. It would be the aim of future lectures to give the students guidance on how to meet these problems on the sites which they would control in the future.

BALLAST AND SAND SUPPLIES

Danger to Housing Effort

THE problems facing the sand and ballast industry were explained by MR. H. E. PEIRCE, chairman of the Ballast, Sand and Allied Trades Association, at a conference in London on October 18. He uttered a warning that unless new gravel pits were opened, the country's housing effort would suffer a serious setback. Work on a number of projects such as power stations, oil refineries, factories, reservoirs, aerodromes and roads might also be delayed, he said.

Mr. Peirce said that some local planning authorities objected to the opening of new pits in their areas although they recognised the vital need for sand and gravel.

The industry had come in for a good deal of criticism from the public on the grounds that they were wantonly tearing up the countryside. This was a false charge, stated Mr. Peirce. The industry was very mindful of the need to restore land which it had worked and his Association advised its members on the best way in which this should be done.

Continuing, he said: "It would be so easy if we could excavate our gravel from some remote area that nobody cares twopence about. But that is impossible, largely because of the high cost of transport. The mineral, which is heavy, must be excavated near the site on which it is to be used.

"The accusation is sometimes made that we are using valuable farmland which the nation cannot do without. At the present rate of production we are using less than 2,000 acres a year—much of which is not farmland anyway. Admittedly some of the land we use is suitable for farming—but much of it will be returned for this purpose eventually. Two thousand acres is a very small fraction of the 51m. acres used for agriculture, grazing and forestry."

MANCHESTER "OVERSPILL"

Minister Gives Decision

MOBBERLEY and Lymm are not to be used by Manchester for housing their "overspill" population. This decision has been notified to Manchester City Council, Cheshire County Council and the Councils of Mobberley and Lymm by Mr. Harold Macmillan, until this week Minister of Housing and Local Government.

In his letter, Mr. Macmillan recalls that the council's proposal was to build approximately 10,500 houses at Mobberley and 12,000 houses at Lymm. In both areas the council intended to provide for appropriate new industry, for amenities, and for all services necessary to ensure good living conditions for such large numbers, other than those services which would normally be provided by the local authorities responsible for the areas in question.

The council based their case on the magnitude and the urgency of their need for houses; on the difficulty of finding other land on which they could build on the scale and at the pace required; and on the fact that both places are, in their opinion, well suited to the development of satellite towns.

OTHER ALTERNATIVES

Mr. Macmillan says that he accepts that Manchester has a great need for more houses and a serious difficulty in finding land on which to build them. He is anxious that they should make a drive on slum clearance and recognises that not all the families now living in slums can be rehoused on the sites to be cleared.

"However, in view of the agricultural quality of the land in both Mobberley and Lymm, and the importance of preserving Manchester's natural green belt, the Minister is clear that it would be wrong to allow development in either place if that can be avoided," says the letter. And, apart from this, he agrees that Mobberley "is not a good place for large-scale development. It would mean an extension of the city into what is at present open country. . . .

"The question of Lymm is more difficult. The chief objection to development here is the agricultural value of the land, though there is also objection to the encroachment on the open land which at present helps to reduce the urban spread. At the same time, Lymm offers some obvious advantages for industry, and Manchester could no doubt develop here a town with a life of its own. If the Minister was satisfied that there was no alternative—or no alternative less damaging—it might be necessary to contemplate such development, in spite of the disadvantages. For the people of Manchester undoubtedly need a great many new dwellings, and not all of these can be built within the limits of the existing developed area.

"But it seems to the Minister that there are alternatives. In the first place, the council should make the maximum use of land within the city in the course of redevelopment. The Minister is not satisfied that their present building plans do provide for getting the most out of re-development that can be got. In the second place, the Minister thinks that the council could build a great many houses on some, at any rate, of the sites referred to by the County Councils of Cheshire, Lancashire and Derbyshire, and that they could develop more intensively than is at present contemplated some of the sites already in view."

NATIONALISATION THREAT

"Be Vigilant" Warning

THE building trade must be vigilant and rigid in running its affairs if it was to combat the growing and real threat of nationalisation of the industry, said Mr. W. N. FOWLER, chief executive officer of the Federation of Master Builders, at Hexham, Northumberland, on October 12. He was speaking at a meeting at which a local branch of the Federation was formed.

He said that a recent political party conference had shown that there was still a strong voice in the country crying for the national control of the building industry. Unless the trade was jealous in guarding its interests nationalisation might come about.

Apart from that threat, however, the barometer for the future of the industry appeared to be set fair and if there was no political interference the industry was likely to make great strides in the next few years.

The capital investment in building for the next two years was tremendous and every builder in the country could reasonably expect to have a full order book. For five to 10 years ahead there should be prosperity for the industry.

But the revival of the nation's economy meant keener competition and the firms which were up to the mark and efficient were likely to keep their heads above water, while the badly-managed businesses went under.

The building trade had always been chancy and there was still a high percentage of casualties.

It was, however, one of the most important industries in the country since everything started from building.

He said investments in building now amounted to £200m. a year, and all builders had a responsibility to the nation as well as themselves.

Mr. M. Hogarth, of Corbridge, was elected first chairman of the Hexham branch and Mr. Tom Newman, Hexham, the secretary.

DIRECT BUILDING AT PENZANCE

Council's Scheme Shows Profit

PENZANCE Town Council, by means of direct labour, has built and sold its first people's bungalows at £1,750, and has also made a profit of £150 on each bungalow. This was stated by MR. A. G. BAZELEY, chairman of the Penzance Housing Committee, at a recent meeting.

Mr. Bazeley said a direct labour organisation had been formed in Penzance because at one time it was impossible to get tenders from private builders to put up council houses at a price the Ministry would accept. The Council had agreed to build the bungalows to show local builders what could be done, and to try to prove to them whether or not there was a market for bungalows of this type. If they were prepared to try, the Council would help them.

The Housing Committee reported that 44 houses had been allocated to Penzance for next year. It was proposed to build 17 flats at Navy Inn-court, 11 flats and 8 houses at Princess Royal Estate, and 8 houses at Heamoor. The Committee also reported that there had been an under-spending of £3,307 on houses already built.

NEW BRF CHAIRMAN

Lord Derwent has been appointed chairman of the British Road Federation in succession to Lord Sandhurst.

NEW COMPANIES

THE FOLLOWING NEW COMPANIES, registered in England, have been announced by Jordan and Sons, Ltd., company registration agents.

Portsmouth & Gore, Ltd. (536673.) Regd. August 9, 141, Staines-rd., Hounslow, Mddx., bldrs. and contractors, etc. Nom. cap.: £1,000. Dir.: R. H. Portsmouth, 564, Staines-rd., Bedfont.

Shearwater, Ltd. (536677.) Regd. August 9, mnfrs. of materials, equipment required in connection with bldg., etc. Nom. cap.: £100. Dirs.: To be apptd. by subs. Sub.: J. F. Goble, 62, London-wall, EC2.

Hardings Shopfitters, Ltd. (536694.) Regd. August 9, Lambton-mews, Lambton-rd., N19, shopfitters and joinery mnfrs. Nom. cap.: £1,000. Dir.: E. R. Harding, 1, Dominion-dr., Romford, Essex.

Heating & Ventilation Services, Ltd. (536695.) Regd. August 9, Victoria Bridge, Stockton-on-Tees. Nom. cap.: £100. Dirs.: H. G. Wellingham, A. Akenhead and K. Fawcett. Subs.: Jean Herbert and Claire Moore, 128, Albany-st., NW.

J. S. Lovell, Ltd. (536697.) Regd. August 9, 6, Hanover-sq., W1, bldrs., etc. Nom. cap.: £1,000. Dirs.: J. S. Lovell and Mrs. N. A. Lovell, 73, Artesian-rd., W2.

North East Joinery Co., Ltd. (536699.) Regd. August 9, Back Glen-st., Hebburn-on-Tyne, Co. Durham. Nom. cap.: £500. Dir.: J. M. Black, 99, York-ave., Jarrow, Co. Durham.

W. R. Farr, Ltd. (536705.) Regd. August 9, Grimsdyke Works, Grimsdyke-rd., Hatch End, Mddx., bldrs., etc. Nom. cap.: £1,000. Dirs.: W. R. Farr and Mrs. I. M. Farr, 113, Rosslyn-cres., Wealdstone, Mddx.

Alan Edge (Plumbers), Ltd. (536713.) Regd. August 10, 106, Walter-rd., Swansea. Plumbing and heating engr. Nom cap.: £1,000. Dir.: A. A. H. Edge, 32, Alice-st., Cwmbwrla, Swansea.

Frank Quinn, Ltd. (536720.) Regd. August 10, 27, Dunstable-rd., Luton, Beds, bldrs., etc. Nom. cap.: £1,000. Dir.: F. J. Quinn, 49, Essex-st., Luton, Beds.

British Plaster Board (Manufacturing), Ltd. (536839.) Regd. August 12, Bath Hse., 82, Piccadilly, W1, bldrs., contractors, mnfrs. of plaster board, etc. Nom. cap.: £750,000. Dir.: Rt. Hon. Baron Belper, Kingston Hall, Notts.

South Wales Concrete Pipe Co., Ltd. (536806.) Regd. August 12, Lanelay Works, Pontyclun, Glam., mnfrs. of concrete pipes, lighting columns and pylons, etc. Nom. cap.: £50,000. Dirs.: Not named. Sub.: J. L. M. Garrett, 34, Stoke-rd., Taunton, Somerset.

AWY, Ltd. (536738.) Regd. August 11, 36, District-rd., Wembley, Mddx., consultants on management and productivity problems in building and allied industries, etc. Nom. cap.: £100. Dirs.: A. W. Yeomans and Mrs. E. M. Yeomans, 36, District-rd., Wembley, Mddx.

Denis & Parry, Ltd. (536739.) Regd. August 11, cabinet makers, joiners, carpenters, etc. Nom. cap.: £400. Dirs.: R. E. Denis and E. J. Parry, address not stated. Sub.: L. Dixon, 131a, Brentwood-rd., Romford, Essex.

Gotheridge & Sanders, Ltd. (536745.) Regd. August 11, bldrs. and contractors, etc. Nom. cap.: £1,000. Sub.: W. G. Sanders, 9, Dam-st., Lichfield, Staffs.

Hancock & Rees, Ltd. (536746.) Regd. August 11, 5, High Holborn, WC, bldrs., contractors, etc. Nom. cap.: £100. Dirs.: To be appointed. Subs.: A. Isaacs, 74, Chinnor-cres., Greenford, Middx.

Electrocult, Ltd. (536769.) Regd. August 11, Electrocult Works, Station-rd., Harpenden, Herts, mnfrs. of materials, equipment and processes for heating bldgs., etc. Nom. cap.: £100. Dirs.: Not named. Subs.: C. J. Pollard & C. G. Stickler, 11, Old Jewry, EC2.

Seven (CE), Ltd. (536804.) Regd. August 12, Bank-st., Stockport, civil and constructional engrs., etc. Nom cap.: £12,000. Dir.: R. Burke, 45, Birch-la., Longsight, Manchester.

Thomas, Rees & Jones (Building Contractors), Ltd. (536808.) Regd. August 12, Tyisha Cottage, Burry Port, Carmarthenshire. Nom. cap.: £2,000. Dir.: L. E. Rees, Tyisha Cottage, Burry Port, Carms.

Beacon Contractors Supply Co., Ltd. (536842.) Regd. August 13, 51, Bath-st., Sedgley, Staffs, public works contractors, etc. Nom. cap.: £1,000. Dir.: A. J. Moorby, Broadway, Rosemary-ave., Wolverhampton.

Buckinghamshire Brick Co., Ltd. (536843.) Regd. August 13, 1, Amersham-hill, High Wycombe, Bucks. Nom. cap.: £4,000. Dir.: G. W. Knowles, Desborough Hse., Amersham Hill, High Wycombe.

G. T. Mousley & Sons, Ltd. (536858.) Regd. August 13, Commonwealth Hse., New Oxford-st., WC1, bldrs., decorators, etc. Nom. cap.: £100. Dirs.: E. A. Thomas and Mrs. R. M. Thomas, Long Barn, Waverley Abbey, Farnham, Surrey.

S. & B. Furniture Products, Ltd. (536883.) Regd. August 13, 8, Railway-approach, Sydenham, SE26, mnfrs. of plywood, panelling etc. Nom. cap.: £2,000. Dir.: G. C. Bocking, 57, Selhurst-rd., SE25.

Stemming Supply Co., Ltd. (536884.) Regd. August 13, mnfrs. of natural and artificial stone, paints, doors, wallboards, windows, etc. Nom. cap.: £100. Dirs.: To be appointed. Subs.: Jean Herbert and Claire Moore, 128, Albany-st., NW.

Talke O'th'hill Fireplace Co., Ltd. (536982.) Regd. Aug. 16. Nom. cap.: £50,000. Dirs.: Not named. Sub.: W. Moore, Kahslet, Kinnerley-ave., Kidsgrove, Stoke-on-Trent.

A. S. Lowrey & Sons, Ltd. (536904.) Regd. Aug. 14, elec. engrs. and genl. electrical installation contractors, etc. Nom. cap.: £4,000. Dir.: A. S. Lowrey, 146, Moorside North, Newcastle-on-Tyne.

★ *Manufactured in London by The Rapid Floor Company Ltd., and in provincial factories by selected Licensees, ensures easy and personal attention to your requirements.*

THE RAPID FLOOR COMPANY LTD

AFRICA HOUSE · KINGSWAY · LONDON · W.C.2. *Tel.: HOLborn 3274-5*

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★ **Rapid Floors (Wessex) Limited, 17, George Street, Bath** (*West of England*) *'Phone: Bath 3534*

★ **John Ellis & Sons Limited, 21, New Walk, Leicester** (*North Midlands*) *'Phone: Leicester 56682*

★ **Kingston Concrete Products Limited, Ryde Avenue, Hull** (*North of England*) *'Phone: Central 8414 (Pt. Bch. Exch.)*

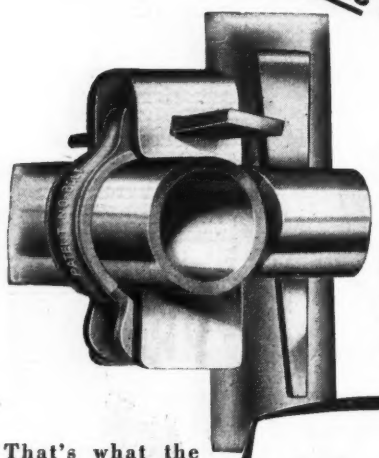
★ **Price & Company (Glasgow) Limited, Inchinnan Road, Renfrew** (*Scotland*) *'Phone: Renfrew 2242/3*

★ **Woolaway Constructions Limited, Lanelay Works, Pontyclun, Glamorgan** (*S. Wales*) *'Phone: Pontyclun 356*

★ **Tarmac Limited, Vinculum Department, Ettingshall, Wolverhampton** (*West Midlands, also Sussex and Hants*) *'Phone: Bilston 41101* *and at Littlehampton*

5 five times the work...

...for the same labour costs



Supplied also with CAPTIVE WEDGES which cannot be lost. Quick delivery ex-stock and an efficient service guaranteed. NO-BOLT Scaffolding Couplers are rust-proof (Sherardized).

NO-BOLT
Double Coupler
Type S.F.W.

That's what the NO-BOLT Coupler does for you when it comes to scaffolding erection. The NO-BOLT Double Coupler has no nuts or bolts to tighten, jam or get lost—no threads to cross or rust. Simply a wedge—a tap with a hammer secures it, another tap frees it. The fastest, safest, simplest method of scaffold erection—and no maintenance. With the NO-BOLT system any type of scaffolding can be erected at less cost. An 80% saving is quite usual. Why not write for details?

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Demonstrations arranged to prove that with the NO-BOLT System any form of scaffolding can be erected at less cost.

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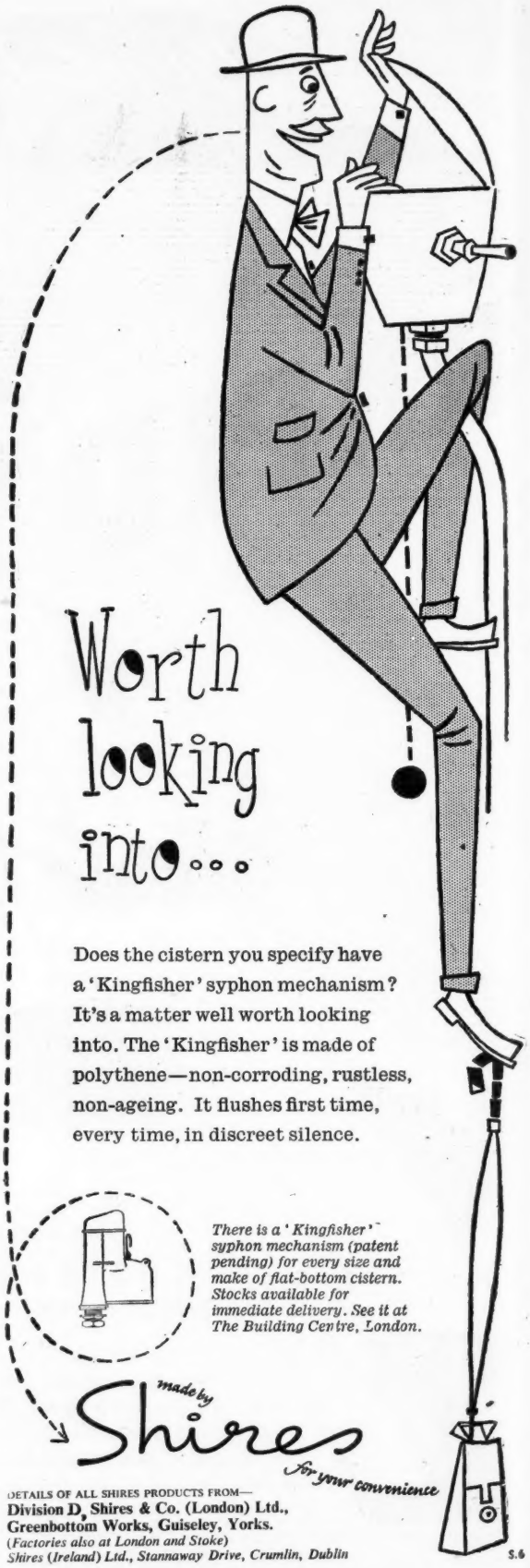


Worth looking into...

Does the cistern you specify have a 'Kingfisher' syphon mechanism? It's a matter well worth looking into. The 'Kingfisher' is made of polythene—non-corroding, rustless, non-ageing. It flushes first time, every time, in discreet silence.

There is a 'Kingfisher' syphon mechanism (patent pending) for every size and make of flat-bottom cistern. Stocks available for immediate delivery. See it at The Building Centre, London.

made by **Shires** for your convenience

DETAILS OF ALL SHIRES PRODUCTS FROM—
Division D, Shires & Co. (London) Ltd.,
Greenbottom Works, Guiseley, Yorks.
(Factories also at London and Stoke)
Shires (Ireland) Ltd., Stannaway Drive, Crumlin, Dublin

S.6

The Builder

CURRENT PRICES OF MATERIALS

THE information given on these pages has been specially compiled for *The Builder* and is copyright. It is the intention that the details given should indicate fair average prices of materials not necessarily the highest or the lowest. The prices apply to large quantities of materials loaded at works, delivered at London Stations or at site in London Area as stated. Prices for smaller quantities ex merchants warehouse will necessarily be higher so as to include the stocking and handling costs involved. Due to the exceptional circumstances now prevailing it is recommended that the prices of materials should be confirmed by inquiry from suppliers and merchants.

AGGREGATES AND SAND

Delivered site in full lorry loads. Average of prices for Boroughs of Westminster, Paddington, Holborn and St. Pancras.

		£	s.	d.
Pit Ballast	per yd.	1	3	1
Pit Sand	,,	1	1	8
Washed Sand	,,	1	3	8
¾ in. Shingle	,,	1	0	0
¾ in. Broken Brick	,,		19	3
Pan Breeze	,,		9	6
Fine or Coarse Foamed Slag Aggregate ...	per ton	3	0	9
2 yds. of fine and 2.6 yds. of coarse per ton				

CEMENT, etc.

Including non-returnable jute sacks or paper bags.

		£	s.	d.
Best British Portland Cement. Standard Specification delivered Charing Cross area.				
6-ton loads and upwards, site ...	per ton	4	16	6
1 to 6 tons, site ...	,,	5	5	6
Ferrocrete Rapid Hardening Cement in 6-ton loads and upwards to site ...	,,	5	4	6
1 to 6 ton do. site ...	,,	5	13	6
Aquacrete Water Repellent Cement. 32s. 6d. per ton on ordinary cement prices.				
Red, Buff or Khaki Colorcrete in 6-ton lots ...	,,	6	18	0
Other colours according to colour.				
In 4-ton lots from 211s. 9d. to 435s. 9d. per ton.				
White Portland Cement ...	,,	12	17	0
Under 1 ton ...	per cwt.		15	4
417 Cement (Ultra Rapid Hardening) in 6-ton lots and upwards ...	per ton	6	9	0
Super Cement (Waterproof), 32s. 6d. per ton above Portland Cement.				
Cullamix Tyrolean Finish, £9 4s. 3d. to £10 17s. 9d. (1-ton loads and upwards).				
Lightning and Ciment Fondu Brands High Aluminous cement, 6-ton lots and up ...	,,	14	0	9
Stourbridge Fireclay, 6-ton loads at Railway Depot, London ...	,,	6	2	3

BRICKS

		£	s.	d.
Full Loads.				
First Hard Stocks ...	per 1,000	11	7	0
Second Hard Stocks ...	,,	10	11	0
Mild Stocks ...	,,	8	16	6
All loaded free into lorry at the works. The question of haulage is still very difficult and prices must be obtained from job to job.				
2½ in. Nominal Fletton Bricks to sites in W.C. District Commons ...	,,	5	13	0
Cellular do. ...	,,	5	13	0
Keyed do. ...	,,	5	15	0
Rustics ...	,,	6	18	0
Cellular Rustics ...	,,	6	18	0
Single Bullnose do. ...	,,	6	13	0
Sandfaced ...	,,	7	13	0
Best Blue Pressed Staffs (London Stations) ...	,,	24	19	6
Do. Bullnose (London Stations) ...	,,	25	13	6
Blue Wire Cuts (London Stations) ...	,,	22	11	0
Midhurst Lime Bricks (London Sites) ...	,,	10	3	0
Uxbridge Whites (London Sites) ...	,,	9	1	6
2½ in. Best Stourbridge Fire Bricks (London Stations) ...	,,	24	6	0
3 in. do. (London Stations) ...	,,	29	3	3
2⅝ in. Machine-made Sandfaced Red Facings (London Sites) ...	,,	13	19	6
2⅝ in. Machine-made Multi Red Facings (London Sites) ...	,,	14	4	6
2⅝ in. Hand-made Sandfaced Red Facings (London Sites) ...	,,	14	7	0
2⅝ in. Hand-made Sandfaced Multi-Colour Facings (London Sites) ...	,,	14	7	0
Hand-made Sandfaced Cherry Red Facings. Berkshire district (London Sites) ...	,,	17	5	6
Hand-made Sandfaced Multi Colour Facings. Berkshire district (London Sites) ...	,,	17	5	6
Rubber Bricks for ganged arches (London Sites) ...	per 1,000	41	10	0
2⅝ in. Surrey Clamp Burnt Multi Stock Facings (London Sites) ...	,,	13	6	0
2⅝ in. Surrey Kiln Burnt Multi Stock Facings (London Sites) ...	,,	14	4	6
Glazed Bricks (London sites), White, Ivory, Brown—				
Stretchers ...	,,	64	0	0
Headers ...	,,	63	0	0
Quoins, Bullnose and 4½ in. Flats ...	,,	80	0	0
Double Stretchers ...	,,	85	0	0
Double Headers ...	,,	77	10	0
One side and two ends ...	,,	87	0	0
Two sides and one end ...	,,	89	10	0
Splays and Squints ...	,,	83	0	0
Cream and Buff £3 extra over White. Other colours, hard glaze, £8 10s. 0d. extra over White. All above prices plus 7½% for Best quality and plus 7½% less 10% for Second quality.				

PARTITION SLABS, etc.

Delivered Central London Area.

HOLLOW CLAY PARTITION BLOCKS (Keyed)

	Minimum lorry loads.			
2 in. ...	140 yds. ...	per yd. sup.	4	3
2½ in. ...	140 yds. ...	,,	4	6
3 in. ...	120 yds. ...	,,	5	2
4 in. (6 cavity) ...	95 yds. ...	,,	6	7
Half blocks at no extra charge.				

CLINKER CONCRETE.

2 in. ...	100 yds. ...	,,	3	7
2½ in. ...	85 yds. ...	,,	4	2
3 in. ...	75 yds. ...	,,	5	0
4 in. ...	55 yds. ...	,,	6	2

CRANHAM

2 in. ...		,,	6	8
2½ in. ...		,,	7	4
3 in. ...		,,	8	7
4 in. ...		,,	10	7
4½ in. Load bearing quality ...		,,	11	8

FLOOR BLOCKS

3 in. Floor Blocks 12 in. by 12 in. delivered in full lorry-loads ...		per 1,000	32	11	0
4 in. do. ...		,,	34	18	0
5 in. do. ...		,,	41	11	0
6 in. do. ...		,,	46	16	0
7 in. do. ...		,,	56	18	0
8 in. do. ...		,,	66	14	0

STONEWARE DRAIN PIPES, etc.

The following are the percentages to be added to the Standard List prices delivered London Area.

	Over 2 tons	Over 100 Pieces under 2 tons	Under 100 Pieces under 2 tons
Best Quality	+67½%	+97½%	+107½%
B.S.S. Best do.	+10% +67½%	+10% +97½%	+10% +107½%
Tested Quality	+37½% +67½%	+37½% +97½%	+37½% +107½%
B.S.S. Tested do.	+47½% +67½%	+47½% +97½%	+47½% +107½%

		£	s.	d.
3 in. Land Drain Pipes (in 12 in. lengths) ...	per 1,000	10	13	6
4 in. do. ...	,,	14	2	0

STONE

		£	s.	d.
Bath Stone—				
Monks Park ...	per ft. cube		7	10
St. Aldhelm Box Ground ...	,,		8	10
Delivered in railway trucks at South Lambeth B.R. Western Region				
Doulting Stone Random Blocks. Delivered London area	,,		8	4
Beer Stone. Delivered London area ...	,,		8	0
Portland Stone—				
Brown Whitbed in random blocks, 20 ft. average delivered in railway trucks at Nine Elms, B.R. Southern Region ...			8	1½
Yorkshire Stone—Blue Robin Hood Quality.				
Delivered to site London in 6-ton lots.				
9 in. × 3 in. Rubbed, weathered, throated and stooled cills ...	per ft. cube	3	4	3
12 in. × 6 in. do. do. ...	,,	2	6	0
12 in. × 3 in. Plain coping, twice throated ...	,,	1	15	4
12 in. × 3 in. Weathered and twice throated coping	,,	2	7	4
14 in. × 6 in. do. do. ...	,,	2	2	8
4½ in. × 9 in. Plinth, rubbed on top and face ...	,,	1	18	1
3 in. sawn two sides Slabs, random sizes ...	per ft. sup.		6	9

STONE—*continued*

		£	s.	d.
Templates and Cover Stones, 3 in., 4 in. and 6 in. thick, edges coped for rendered brickwork ...	per ft. cube	1	3	5
Do. do. fair one edge for fair faced brickwork		1	7	10
Hard York—				
12 in. ×2 in. Square Steps, rubbed on top and edge	per ft. run		8	2
14 in. × 3 in. Round-nosed Steps, rubbed on top and front	per ft. cube	2	3	8
12 in. ×6 in. Plain Steps, rubbed top and front ...	,,	1	18	3
2 in. Rubbed and Jointed Paving, given sizes ...	per ft. sup.		7	10
2 in. Sawn Paving, edges squared, in random sizes	per yd. sup	2	13	10

TILES and PANTILES

Delivered London area by road in 6 tons or over per 1,000			
Machine-made Pantiles and French pattern Tiles from Lincolnshire district	29	8	0
Hand-made Pantiles Berkshire district	47	10	0
Hand-made Double Roman Bridgwater district	58	13	6
Hand-made 10½ × 6½ tiles Berkshire district	13	1	9
Machine-made 10½ × 6½ Staffordshire district	13	8	9
Hand-made Hip and Valley tiles per doz.	1	8	9
Machine-made Hip and Valley tiles do.	1	6	6
Concrete tiles 10½ × 6½	7	14	6
do. Interlocking (49S)	18	9	6

NOTE.—Breakage in transit, purchasers' responsibility.

SLATES

First-quality Slates from Penrhyn or Portmadoc, carriage paid in full truck loads to London Rate Station. Per 1,000 actual.			
24 × 12	113	0	4
22 × 12	93	16	0
22 × 11	84	15	0
20 × 12	79	19	6
20 × 10	74	12	0
18 × 10	53	18	9
18 × 9	47	5	6
16 × 10	44	7	0
16 × 8	34	10	6

NOTE.—Breakage in transit, purchasers' responsibility.

TIMBER

Softwood—					
Joinery quality	Ex. Wharf	per standard	£105 to £125		
Carcassing quality	do.	,,	£95 to £100		
1 in. Tongued and Grooved Flooring	do.	,,	£106	0	0
Hardwood—					
Mahogany—African S.E. ...	do.	per ft. cube	1	5	0
do. Honduras do. ...	do.	,,	3	5	0
Oak European do. ...	do.	,,	1	18	6
do. Japanese do. ...	do.	,,	2	5	0
do. English Logs sawn	do.	,,	1	5	0
Teak 8 in. average S.E.	do.	,,	3	0	0
Walnut African Logs sawn	do.	,,	1	1	6

DOORS (in Lots I-II)

Delivered London area.				
1½ in. 4 Horizontal Panel Pattern 4 in. deal				
2 ft. 0 in. × 6 ft. 6 in.	each	1	12	0
2 ft. 3 in. × 6 ft. 6 in.	,,	1	13	0
2 ft. 6 in. × 6 ft. 6 in.	,,	1	14	0
2 ft. 9 in. × 6 ft. 6 in.	,,	1	16	6
2 in. do. but top panel open. Pattern 4 × G in deal				
2 ft. 6 in. × 6 ft. 6 in.	,,	2	9	0
2 ft. 9 in. × 6 ft. 6 in.	,,	2	11	6
2 in. Panel, top panel open. Pattern 2 × G in deal				
2 ft. 6 in. × 6 ft. 6 in.	,,	2	1	9
2 ft. 9 in. × 6 ft. 6 in.	,,	2	3	6

SUNDRIES

Delivered London area				
1 in. Wood Wool Slabs, 6 ft. 0 in. × 2 ft. 0 in. in quantities of 1 ton (89 yds. to 1 ton)	per yd.	5	8	
1½ in. do. (67 yds. to 1 ton)	,,	7	4	
2 in. do. (52 yds. to 1 ton)	,,	8	11½	
2½ in. do. (45 yds. to 1 ton)	,,	10	3	
3 in. do. (39 yds. to 1 ton)	,,	11	5½	
Quantities under 1 ton add 1d. per ½ in. of thickness.				
¼ in. imported insulation Board, quantities over 5,000 sq. ft.	per 100 sq. ft.	2	2	6
¼ in. Hardboard do.	,,	2	1	6
⅛ in. do. do.	,,	3	2	6
⅛ in. Asbestos Flat Building Sheets	per yd. sup		3	2
Roofing Felt, 1-ply	,,		1	6
do. 2-ply	,,		1	9
Best Scotch Glue, in slabs	per ½ cwt.	5	0	0
do. pearl	,,	5	5	0
Croid Glue	28 lb.	2	6	0
Cut Nails 3 in. (1-ton lots)	per ton	56	5	0
do. 4 in. and up (1-ton lots)	,,	52	15	0
Wire Nails, 3 in. (4-cwt. lots)	per cwt.	2	16	3
do. 4 in. and up (4-cwt. lots)	,,	2	12	9

METALS — STEEL JOISTS, ETC.

Easis Joists—				
6 in. × 5 in., 8 in. × 5 in., 8 in. × 6 in., 10 in. × 6 in. 12 in. × 6 in. plain cut to lengths delivered London area	per ton	38	7	6
Extra for sizes				
3 in. × 1½ in.	,,	3	10	0
3 in. × 3 in., 4 in. × 3 in., 5 in. × 2½ in. ...	,,	1	5	0
4 in. × 1¾ in.	,,	3	0	0
4¼ in. × 1¾ in., 24 in. × 7½ in.	,,	2	0	0
5 in. × 3 in., 22 in. × 7 in.	,,	1	0	0

6 in. × 3 in.	per ton	1	10	0
9 in. × 7 in.	,,		5	0
10 in. × 4½ in. 12 in. × 5 in.	,,		15	0
5 in. × 4½ in. 6 in. × 4½ in. 7 in. × 3½ in. 7 in. × 4 in. 8 in. × 4 in. 9 in. × 4 in. 10 in. × 5 in. 10 in. × 8 in. 12 in. × 8 in. 13 in. × 5 in. 14 in. × 5⅛ in. 14 in. × 6 in. 14 in. × 8 in. 15 in. × 5 in. 15 in. × 6 in. 16 in. × 6 in. 16 in. × 8 in. 18 in. × 6 in. 18 in. × 7 in. 18 in. × 8 in. 20 in. × 6½ in. 20 in. × 7½ in.	,,		10	0
Steel angles average price	,,	39	12	6
Steel tees average price	,,	40	12	6
Fabricated work delivered London—				
R.S. Joists cut and fitted	,,	53	7	6
Compound girders	,,	58	12	6
Stanchions	,,	63	17	6
Compound stanchions	,,	67	7	6
In Roof Work—Trusses and Purlins ... ... Average prices not for awkward work.	,,	79	7	6
Mild Steel Ferro-Concrete bars to BSS785 ex London				
Stock ⅜ in. diam., and upwards	,,	39	14	6
¼ in. diam.	...per ton extra	3	12	0
5/16 in. do.	,,	2	17	0
⅜ in. do.	,,	2	2	0
½ in. do.	,,	1	7	0

MILD STEEL TUBES

Tubes to BSS1387 and Fittings. List prices and following discounts:

Galvanised Tube—	W.I. Fittings	Malleable Fittings
Class A — 13%		
Class B + 7½%	Light + 23½%	Malleable List — 35% + 40%
Class C + 23½%	Heavy + 30½%	
Black—		
Class A — 22%		
Class B — 11½%	Light + 11%	Malleable List — 35%
Class C + ½%	Heavy + 18½%	

C.I. HALF-ROUND GUTTERS

Delivered London per yd. in 6-ft. lengths	Gutters	Nozzles	Stop Ends
3 in.	3/2	2/9	/10
3½ in.	3/5½	3/–	/10
4 in.	4/5½	3/5	1/2
4½ in.	4/10½	3/9	1/6
5 in.	5/5½	4/2	1/8

C.I.O.G. GUTTERS

3 in.	4/1	3/8	/11
3½ in.	4/6½	3/8	1/2
4 in.	5/–	3/9	1/6
4½ in.	5/5½	4/5	1/8
5 in.	5/11	5/1	1/11

C.I. RAIN-WATER PIPES

Per yd. in 6-ft. lengths	Pipe	Bends	Branches
2 in.	6/5½	3/5	4/10
2½ in.	6/9	3/9	6/8
3 in.	7/7	4/9	7/3
3½ in.	8/7	5/8	8/7
4 in.	9/11½	6/11	10/2

L.C.C. COATED SOIL PIPES

2 in.	7/7½	5/10	7/2
2½ in.	8/1	6/6	8/11
3 in.	9/0½	7/2	10/8
3½ in.	10/1½	8/11	12/5
4 in.	11/6½	10/–	14/7

Above prices for gutters, rain-water and soil pipes for under 3 cwt. lots only. Lots over 3 cwt. see List No. 3200 dated May 1, 1952, plus 10% and tonnage allowance. 4-ton lots 5 per cent, 2-ton lots 2½ per cent.

L.C.C. COATED DRAIN PIPES

In 9-fts.	cwt.	qr.	lb.	per yd.	Bends	Branches
4 in.	1	1	17	24/5	16/6	28/9
6 in.	2	0	1	36/3	34/3	58/9

ASBESTOS RAIN-WATER PIPES AND FITTINGS

Orders under £30 less 12½ per cent. discount.
Orders over £30 less 17½ per cent. discount.

		2 in.	2½ in.	3 in.	4 in.
Pipes 6-ft. lengths	...per yd.	3/9	4/–	4/10	6/5
Shoes	each	2/5	2/8	3/2	4/3
Single Branches ...	,,	3/9	4/6	5/4	7/6
Bends square or obtuse	,,	2/8	2/11	3/9	5/4
Swan Necks 4½ in. proj.	,,	2/11	3/9	4/3	5/11
do. 6 in. do.	,,	3/2	3/9	4/10	6/5

ASBESTOS O.G. GUTTERS AND FITTINGS

		4 in.	4½ in.	5 in.	6 in.
Gutters 6-ft. lengths	...per yd.	3/7	3/11	4/8	5/7½
Drop ends	each	2/10	3/4	3/10	4/7
Stop Ends	,,	/10	/11	1/–	1/2
Angles	,,	2/11	3/5	4/1	4/10
Nozzles	,,	2/10	3/4	3/10	4/7
Union Clips	,,	1/5	1/8	2/1	2/5

ASBESTOS HALF-ROUND GUTTERS AND FITTINGS

		3 in.	4 in.	4½ in.	5 in.	6 in.
Gutters 6-ft. lengths	...per yd.	2/6	2/11½	3/0½	3/7	5/–
Drop ends	each	2/1	2/5	2/8	2/11	4/3
Stop ends	,,	/9	/10	/11	1/–	1/2
Angles	,,	2/5	2/8	2/11	3/2	4/3
Nozzles	,,	2/1	2/5	2/8	2/11	4/3
Union Clips	,,	1/–	1/1	1/2	1/4	2/–

Just on one million square yards of BISON flooring have been used in Scottish housing since the war

Illustrated is the Inch Housing Scheme Edinburgh Corporation (1,100 houses) Architects: Stratton Davis & Yates, F/F.R.I.B.A.

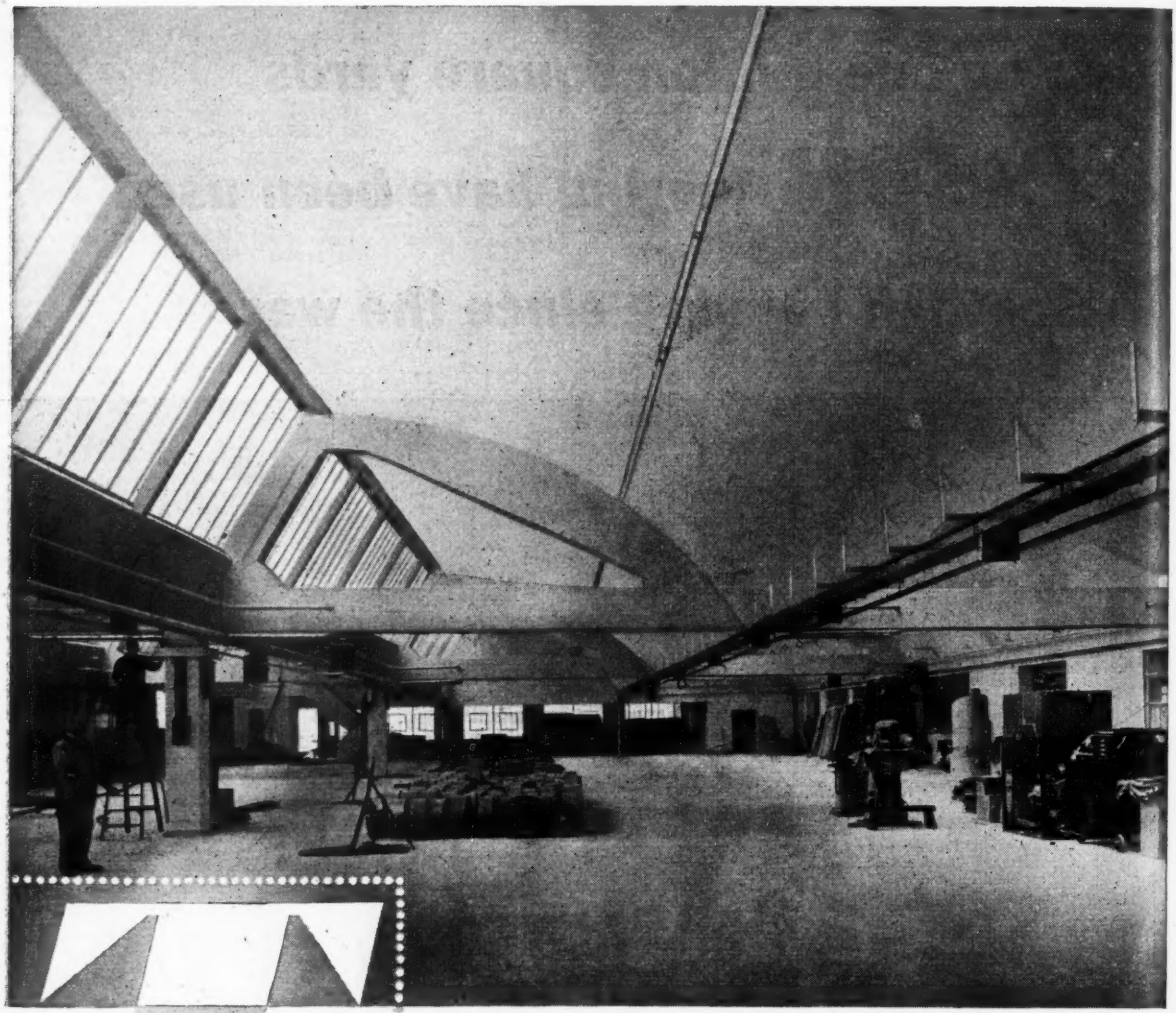
BISON *floors, beams and precast frame structures*

MADE BY THE LARGEST MANUFACTURERS OF CONSTRUCTIONAL PRESTRESSED CONCRETE IN THE WORLD

CONCRETE LIMITED

LONDON Green Lane, Hounslow, Middlesex. Hounslow 2323
LEEDS Stourton, Leeds, 10. Leeds 75421
LICHFIELD Dovehouse Fields, Lichfield, Staffs. Lichfield 2404
FALKIRK Etna Road, Falkirk. Falkirk 1585
EDINBURGH Sighthill Industrial Estate, Edinburgh. Craiglockhart 1729

CON 6



Factory: Underwood, Eliott & Fisher. Architect: R. Seifert, F.R.I.B.A. Contractors: Rice & Son Ltd.

TWISTEEL and the Barrel Vault

This is a factory. Light and clean, airy and un-oppressive: it could equally well be a studio, with the curve of the barrel vault roof reflecting the ample north light evenly over broad floor areas. Note the lack of obstruction to the floor space by structural supports: and the absence of dust traps in the clean sweep of the Wireweld-reinforced Twisteel-designed roof.

TWISTEEL REINFORCEMENT LIMITED

LONDON: 43 Upper Grosvenor Street, W.1. *Telephone: GROsvenor 8101 & 1216*
BIRMINGHAM: Alma Street, Smethwick 40. *Telephone: Smethwick 1991*
MANCHESTER: 7 Oxford Road, Manchester, 1. *Telephone: Ardwick 1691*
GLASGOW: 19 St. Vincent Place, Glasgow, C.1. *Telephone: City 6894*

METALS—*continued*

	Per ton basis in London £ s. d.
Iron—Staffordshire Crown Merchant Quality	40 2 6
Mild Steel Bars	37 17 6
Mild Steel Hoops	39 5 0
	Ex Merchant's Stock per ton Two-ton lots £ s. d.
Soft sheets C.R. and C.A.—	
20 gauge	46 14 6
24 gauge	47 19 6
26 gauge	49 9 6
Galvanised Corrugated sheets 6 ft. to 9 ft.—	
20 gauge	53 12 0
24 gauge	55 12 0
26 gauge	58 7 0
Galvanised Flat sheets, C.R. and C.A.—	
20 gauge	54 12 0
24 gauge	56 12 0
26 gauge	59 7 0

PLUMBERS' BRASS WORK, COPPER, ZINC, ETC.
Delivered in London area.

All per doz.	M.O.H. ½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
Screwdown bib cocks Crutch head for iron	77/-	114/6				
Toilet bib cocks for iron	99/-	142/-				
Screwdown stop cocks for iron	66/-	95/9	188/-	323/6	462/-	815/-
do. with two unions for lead	89/-	132/-	234/4	419/-	554/6	1234/3
Double nut boiler screws	16/6	23/3	42/-	43/-	59/6	83/8
Heavy Croydon ball valves	68/3	155/3	237/7	433/6	614/-	
Plumbers' union brass lead to iron	17/4	21/-	34/9	60/6	74/6	145/3
	1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.
Caps and screws	29/9	36/4	52/9	82/6	105/6	137/6
Brass sleeves			27/6	27/6	49/6	66/- 67/-
			1¼ × 6 lb.	1½ × 6 lb.	2 × 7 lb.	3 × 7 lb.
Lead P. trap with brass cleaning screws	66/-	82/-	132/-	224/-		
Lead S. trap do.	79/-	98/-	161/-	290/-		

Solder	s. d.
Plumbers'	3 5
Tinmen's	4 2
Blow pipe	4 3

Copper tubes BSS 659/1944 on the basic price of 307d. per lb. plus gauge and manufacturing extras as follows. Minimum quantities, 3 cwt.

	Extra d.	Total per lb. d.
⅜ in. × 19 gauge	12½	43½
⅜ in. × 19 ,,	10½	41½
1 in. × 18 ,,	9½	40½
1¼ in. × 18 ,,	8½	39½
1⅛ in. × 18 ,,	8½	39½
2 in. × 17 ,,	10½	41½

		£ s. d.
Rolled Copper sheets up to 48 in. wide, basic price plus gauge and manufacturing extras	per ton	323 15 0
Sheet Zinc, 10 gauge (25 SWG) 5 cwt. lots upwards	per cwt.	6 19 6
do. 12 gauge (23 SWG) do.	,,	6 17 6
do. 14 gauge (21 SWG) do.	,,	6 16 3
Brass tubes basic price, plus gauge and manufacturing extras	per lb.	2 1

LEAD SHEET AND PIPES

Basis selling price in minimum one-ton delivery to one address in London or Home Counties

		£ s. d.
Lead Sheet, English, 3½ lb. substance and upwards	per ton	147 0 0
Lead Water Pipe in coils	,,	148 5 0
Lead Soil Pipe 10 ft. or over 2 in. to 4 in. dia.	,,	149 15 0
do. over 4 in. dia.	,,	151 15 0
Lead Gas or Untinned Compo pipe	,,	149 15 0
Extras over Basis for quantities under 1 ton		
5 cwt. and under 1 ton	per cwt.	2 0
3 cwt. do. 5 cwt.	,,	4 0
1 cwt. do. 3 cwt.	,,	6 0

Smaller quantities than 1 cwt. priced specially.
Supplying sheet lead and lead pipe to less than basis weights and cutting to sizes less than basis charged extra according to current trade schedule.
Allowance for Old Lead, collected £100 5s. 0d. per ton weighed at buyer's works.

PLASTER, etc.

			£ s. d.
Coarse Pink in 1-ton loads and over Delivered on Site	per ton		7 6 6
do. White do. do.	,,		7 14 3
Sirapite Coarse do. do.	,,		7 9 0
do. Fine do. do.	,,		7 17 0
Blue Lias Lime in 6-ton loads	,,		6 9 6
Hydrated Lime do.	,,		5 12 6
Lump Lime do.	,,		5 2 0
White Keen's or Parian Cement in 1-ton loads	,,		10 4 0
Pink Keen's or Parian Cement in 1-ton loads	,,		9 18 6
Granite Chips in 6-ton loads	,,		2 6 3
Hair	per cwt.		4 17 6
Gypsum Plaster Lath or Base Board ⅜ in. thick 600 yds. and over in one delivery. Delivered site	per yd.		2 2
1,200 yds.	,,		2 1½
Gypsum Plaster Wall Boards, 3 and 4 ft. wide, 6 to 12 ft., ⅜ in. thick, 600 yds. and over in one delivery. Delivered site	,,		2 5
1,200 yds.	,,		2 4½

PAINT AND DISTEMPER

Delivered London area		£ s. d.
Ceiling Distemper	per cwt.	1 7 6
Washable Distemper	,,	5 5 0
Gloss Paint	per gal.	2 10 0
Snowcem cement paint (in 1 cwt. drums)	per cwt.	3 11 0

LEAD PRODUCTS AND OILS.

Ground White Lead, 1 cwt. kegs	per cwt.	8 18 0
Genuine White Lead Paint, 20 gal. lots in 1 gal. tins	per gal.	3 2 0
Genuine Red Lead, Dry, 1 cwt. keg	per cwt.	7 8 6
Genuine Linseed Oil Putty, 1 cwt. keg	,,	2 7 0
Size XD quality, 28 lb.	per tin	9 0
Raw Linseed Oil (5 gal.) Drums extra	per gal.	10 6
Boiled Linseed Oil (5 gal.) do.	,,	11 0

SUNDRIES.

Turpentine substitute (5 gal.) drums extra	,,	5 6½
do. do. (40 gal.) do. do.	,,	4 8½
Solignum, Brown (5 gal. cans) Exterior	,,	6 6
Creosote (40 gal. barrels)	,,	2 0
Paste Powder (1 lb. packets)	per lb.	1 6
White Lining Paper	per piece	1 0

VARNISHES, etc.

Delivered London area.		
Oak Varnish, Outside or Inside	per gal.	1 12 6
Oak Pale Copal do.	,,	1 15 0
Hard Drying Oak for Inside	,,	1 17 6
Crystal Paper Varnish do.	,,	2 2 6
Eggshell Flat Varnish do.	,,	2 2 6
Finest Carriage Varnish	,,	2 10 0
Front Door Varnish	,,	1 17 6
Japan Gold Size	,,	1 10 0
Black Japan	,,	1 5 0
Brunswick Black	,,	1 0 0
Berlin Black	,,	1 5 0
Terebene	,,	1 5 0
Knotting (1 gal. bottles free)	,,	1 12 0
French and Brush Polish (do.)	,,	1 13 0

GLASS

Delivered London area.	Per ft. super s. d.
18 oz. Sheet Glass, Ordinary Glazing Quality. Cut Sizes	5½
24 oz. ,, ,, ,, ,, ,, ,,	7½
26 oz. ,, ,, ,, ,, ,, ,,	9½
32 oz. ,, ,, ,, ,, ,, ,,	1 0
⅛ in. Rolled Plate	9
⅛ in. and ¼ in. Rough Cast	1 0
⅛ in. Figured Rolled and Cathedral, Standard patterns: White	9
do. Standard Tints	1 4½
do. Special Tints	2 9
⅛ in. Cross Flexon, Pinstripe, Hammerstripe, Reeded, Reedlyte and Luminating	1 1
¼ in. Wired Cast	1 2
¼ in. Georgian Wired Cast	1 2½

Hollow Glass Blocks—	Each
P.B.2 5¾ × 5¾ × 3⅞ in.	2 9
P.B.3 7¾ × 7¾ × 3⅞ in.	4 2
P.B.32 7¾ × 7¾ × 3⅞ in.	4 2
Radiused Corner Blocks to match up with—	
P.B.2	5 3
P.B.3	6 9
P.B.32	6 9

¼ in. Polished Plate Glass, G.G. Quality—	Per ft. super
In plates not exceeding 2 ft. sup.	3 7
,, ,, ,, 5 ft. sup.	4 5
,, ,, ,, 45 ft. sup.	5 1
,, ,, ,, 100 ft. sup.	5 6

¼ in. Polished Plate, extra sizes, *i.e.*, plates exceeding 100 ft. sup. or 160 in. one way or 96 in. both ways. G.G. quality—

Not exceeding 135 ft. sup. or 250 in. one way or 135 in. both ways	8 4
Not exceeding 180 ft. sup. or ditto	11 3
Not exceeding 200 ft. sup., or ditto	16 0

Plates exceeding 200 ft. sup. prices on application.
Substances other than ¼ in. Polished Plate at Special Prices.

Quantity Tariff—Sheet and Sundry Glass.
The following prices apply to minimum quantities of one size and one pattern delivered by the manufacturer to one site at one time.

Description of Glass	Minimum quantity	Per ft. super s. d.
18 oz. sheet O.Q.	3,000	4
24 oz. ,, ,,	2,000	5½
26 oz. ,, ,,	2,000	7½
32 oz. ,, ,,	2,000	9½
⅛ in. Rolled Plate	1,000	7½
⅛ in. Figured Rolled and Cathedral Standard Patterns, White	1,000	7½
⅛ in. Cross Flexon, Pinstripe, Hammerstripe, Reeded, Luminating and Spotlyte	1,000	10½
⅛ in. and ¼ in. Rolled Plate or Rough Cast	2,000	10½
¼ in. Wired Cast, Hexagonal	2,000	11½
¼ in. Georgian Wired Cast	2,000	1 0½

The Builder

CURRENT RATES OF WAGES

AS FROM OCTOBER 4, 1954. **(Every endeavour is made to ensure accuracy but we cannot be responsible for errors.)**

KEY TO SCHEDULE OF GRADE RATES.

Grade Classification.	A	A1	A2	A3
Craftsmen	3/9	3/8½	3/8	3/7½
Labourers	3/3½	3/3	3/2½	3/2

Town.	Grade.
Aberavon	A
Aberdare	A
Abergavenny	A
Abingdon	A2
Ascrington	A
Addlestone	A
Aldeburgh	A2
Aldershot District	A2
Alfreton U.D.	A
Alnwick	A1
Altrincham	A
Amble	A1
Amersham	A1
Ammanford	A
Andover	A2
Ardingly	A2
Arundel	A2
Ascot	A2
Ashby-de-la-Zouch U.D.	A
Ashby Woulds U.D.	A
Ashford (Kent)	A2
Ashford (Middlesex)	A
Ashington	A
Ashtead	A
Ashton-under-Lyne	A
Aspatria and Brayton	A2
Atherstone R.D. (parts of)	A
Aylesbury	A2
Aylesby (Yorks)	A
Aylesham	A2
Bagshot	A2
Bakewell U.D.	A2
Banbury	A2
Barnard Castle U.D.	A
Barnoldswick U.D.	A
Barnsley	A
Barrow-in-Furness	A
Barrow-upon-Soar R.D. (exc. Thrussington A2)	A
Barry	A
Basford R.D. (exc. Willough-by-on-the-Wolds A1)	A
Basingstoke	A1
Bath	A
Batley	A
Baxterley	A1
Beaconsfield & District	A1
Beamish	A
Bearl	A
Bearpark	A
Beccles	A2
Bedale R.D.	A
Bedford	A
Bedlington	A
Bedwas	A
Beeston & Stapleford U.D.	A
Belper U.D.	A
Belton	A
Berkhamsted	A
Berrington	A1
Berwick District	A
Beverley	A
Bexhill-on-Sea	A2
Biggleswade	A2
Billericay	A
Billing	A
Billingham U.D.	A
Bilsthorpe	A
Birchington	A2
Birkenhead	*
Birmingham C.B.	†A
Bishop Auckland	A
Bishop's Stortford	A
Bispham	A
Blackburn	A
Blackpool	A
Blackwell R.D.	A
Blaydon U.D.	A
Blidworth	A
Blyth	A
Bognor Regis	A2
Boldon U.D.	A
Bolsover U.D.	A
Bolton	A
Bourne End	A1
Bournemouth District	A
Bracknell	A2
Bradford	A
Bradford-on-Avon	A2
Braintree	A1
Breconshire, County of...	‡A2
Brent Knoll	A2
Brentwood	A
Bridlington	A
Brierfield	A
Brighouse	A
Brighton	A
Bristol	A
Broadstairs	A2
Bromsgrove U.D.	A
Brough	A
Broughton (Cheshire)	A
Buckley	A
Bungay	A2
Burnham-on-Crouch	A2
Burnley	A
Burton-on-Trent C.B.	A
Bury	A
Bury St. Edmunds	A1
Buxton	A
Byfleet	A1
Calder Valley	A
Cambridge	A
Cannock U.D.	A
Canterbury	A2
Cardiff	A
Cardiganshire, County of	‡A2
Carlisle	A
Carmarthenshire, Cnty of	‡A2
Caernarvonshire, Cnty. of	‡A2
Carnforth	A
Castleford	A
Caterham	A
Chapel-en-le-Frith	A
Charmy Down	A
Chatham & District	A1
Cheadle (Staffs) R.D.	A
Chelmsford	A
Cheltenham	A
Chepstow	A1
Chertsey	A
Chester	A
Chesterfield M.B.	A
Chesterfield R.D.	A
Chester-le-Street U.D.	A
Chichester	A2
Chippenham (inc. Chippen-ham Within and Harden-huish)	A2
Chorley	A
Clacton	A1
Cleethorpes	A
Clevedon	A1
Cleveleys	A
Clitheroe	A
Coalville U.D.	A
Cobham (Surrey)	A
Colchester	A
Colne	A
Colwyn Bay	A1
Congleton	A1
Consett	A
Conway	A1
Cornwall, County of	‡A2
Coventry C.B.	A
Cranbrook	A2
Cranleigh	A2
Crawley (Sussex)	A1
Crewe	A
Cromer	A1
Crowborough	A2
Cuckfield	A2
Dalton-in-Furness	A
Darlington District	A
Darwen	A
Deal	A2
Denbigh Town	A2
Derby C.B.	A
Devizes	A2
Devon, County of	‡A2
Dewsbury	A
Didcot	A2
Diss	A2
Doncaster C.B.	A
Dorking	A
Dorset, County of (except-ing Poole, Swanage and Wimborne A1)	A2
Dover	A2
Dovercourt	A
Driffield U.D.	A1
Droitwich M.B.	A
Dudley M.B.	A
Dunstable	A
Durham City	A
Eastbourne	A
E. Glam. & Mon. Val.	A
East Grinstead District	A2
Eastwood (Notts.) U.D.	A
Ebbw Vale & District	A
Edenbridge	A2
Ely	A2
Epping	A
Exeter	A
Fakenham	A2
Falmouth	A2
Fareham	A
Faversham	A2
Felixstowe	A1
Filey U.D.	A
Fleetwood	A
Flint	A
Folkestone	A2
Frinton	A1
Frome	A1
Gainsborough U.D.	A
Gateshead	A
Gillingham (Kent)	A1
Glossop	A
Gloucester	A
Gloucestershire, Cnty. of	‡A2
Godalming	A2
Goole M.B.	A
Gosport	A
Grantham M.B.	A
Gravesend	A
Great Yarmouth	A
Grimsby C.B. & R.D.(part)	A
Grimsby R.D. (remainder)	A2
Guildford District	A2
Guilsborough	A1
Guiseley	A
Halesowen M.B.	A
Halifax	A
Halstead	A2
Haresfield	A1
Harlow	A
Harpenden	A
Harrogate	A
Hartlepool	A
Harwich	A
Haslemere	A2
Hastings	A2
Hatfield (Herts.)	A
Haywards Heath	A2
Hemel Hempstead	A
Henley-on-Thames	A2
Hereford	A2
Herefordshire, Cnty. of	‡A2
Herne Bay	A2
Hertford	A
Hexham U.D.	A
Heysham	A
High Wycombe	A1
Highworth	A2
Hinckley U.D.	A
Hitchin	A
Hoddesdon	A
Horley	A2
Horsham	A2
Horwich	A
Huddersfield	A
Hull	A
Hunstanton	A2
Huntingdon (Staffs)	A
Ilkley	A
Ingatestone	A1
Ipswich	A
Isle of Sheppey	A2
Isle of Thanet	A2
Isle of Wight	A2
Jarrow M.B.	A
Keighley	A
Kendal	A
Kenilworth U.D.	A
Kettering M.B.	A
Keynsham	A
Kidderminster M.B.	A
King's Lynn	A1
Kingskerswell	A1
Kingsteignton	A1
Kirkham	A
Knaresborough U.D.	A
Knowle	A1
Lancaster	A
Leamington M. B.	A
Leatherhead	A
Leeds	A
Leicester C.B.	A
Leighton Buzzard	A1
Letchworth	A1
Lewes	A2
Lichfield M.B.	A
Lincoln C.B.	A
Littlehampton	A2
Liverpool	*
Llandudno	A1
Llanelly	A
London	*
Long Eaton	A
Loughborough M.B.	A
Louth M.B.	A2
Lowestoft	A
Loxton	A2
Luton	A
Lyneham (Devon)	A2
Macclesfield	A
Maidenhead	A1
Maidstone	A1
Maltby	A
Maldon (Essex)	A1
Malvern U.D.	A1
Manchester	A
Manningtree	A1
Mansfield M.B.	A
March	A2
Margate	A2
Market Harborough U.D.	A
Maryport	A
Matlock U.D.	A1
Melksham	A2
Melton Constable	A2
Melton Mowbray U.D.	A1
Merthyr	A
Middlesbrough	A
Middleton	A
Middlewich	A
Milford Haven	A1
Morecambe	A
Morley	A
Mundesley	A2
Nantwich	A
Nelson	A
Newark-on-Trent R.D.	A1
Newbury	A2
Newcastle-on-Tyne	A
Newcastle-under-Lyme	A
New Forest District	A1
Newmarket	A1
Newport, Mon.	A
Newport Pagnell	A2
Newton Abbot	A1
Northallerton Dist.	A
Northampton C.B.	A
North Shields	A
Norton Radstock	A1
Norwich	A
Nottingham C.B.	A
Nuneaton M.B.	A
Oakham U.D.	A2
Oldham	A
Ongar	A
Ormskirk	A
Ossett and Horbury	A
Oxford	A
Oxted	A1
Paignton	A1
Peterborough	A
" Soke	A1
Pickering	A3
Plymouth	A
Pontefract	A
Pontypridd District	A
Portishead	A
Portland Stoneyards	A
Portsmouth	A
Port Talbot	A
Preston	A
Pudsey	A
Pulborough	A2
Radnorshire, County of	‡A2
Ramsgate	A2
Rayleigh	A
Reading	A
Redcar B.	A
Redditch U.D.	A
Redhill and Reigate	A
Ripon	A3
Rochdale	A
Rochester	A1
Rotherham	A
Rugby M.B.	A
Saffron Walden	A2
St. Albans	A
St. Helens	A
St. Neots	A2
Salisbury City	A2
Salisbury Plain	A2
Sawbridgeworth	A
Saxmundham	A2
Scarborough	A
Scunthorpe	A
Selby	A
Sevenoaks	A1
Sheerness	A2
Sheffield	A
Shipley	A
Shoeburyness	A
Shoreham	A
Shrewsbury M.B.	A
Sittingbourne	A2
Skegness U.D.	A1
Skipton U.D.	A
Sleaford U.D.	A2
Slough	A
Smethwick C.B.	†A
Snettisham	A2
Somerset, County of	‡A2
Southampton	A
Southend-on-Sea Dist.	A
Southport	A
South Shields C.B.	A
Spalding U.D.	A2
Stafford M.B.	A
Staines	A
Stamford M.B.	A1
Stantonwick	A
Stevenage	A
Stockport	A
Stockton R.D.	A
Stockton-on-Tees	A
Stoke-on-Trent C.B.	A
Stoke Orchard	A1
Stourbridge M.B.	A
Stourport U.D.	A
Stowmarket	A1
Stratford-on-Avon M.B.	A
Sunderland District	A
Sunningdale	A1
Sutton Coldfield M.B.	A
Swaffham	A2
Swanage	A1
Swansea	A
Swindon	A
Swinton U.D.	A
Tamworth M.B.	A
Tenterden	A2
Tewkesbury	A1
Thames Haven	A
Thetford	A2
Thorpe Bay	A
Thurrock U.D.C. Area	A
" North of, to Billericay	A
Tilbury	A
Todmorden	A
Tonbridge	A1
Torquay	A1
Totnes	A1
Trowbridge	A2
Tunbridge Wells	A1
Tynemouth C.B.	A
Uppingham (Salop)	A1
Uttoxeter U.D.	A2
Wakefield	A
Wallsend B.	A
Walsall C.B.	A
Walsden	A
Walton-on-Naze	A1
Ware	A
Warminster	A2
Warrington	A
Warwick M.B.	A
Wellington U.D.	A
Wells (Norfolk)	A2
Welwyn	A
Welwyn Gar. City	A
West Bromwich C.B.	A
Westbury	A2
Westcliff-on-Sea	A
Westerham	A1
Weston-super-Mare	A1
Weybridge	A
Weymouth	A1
Whitby U.D.	A1
Whitstable and District	A2
Wickford	A
Widnes	A
Wigan	A
Wigton	A2
Willington	A
Wilmslow	A
Wilts. County of	‡A2
Winchester	A1
Windermere	A2
Windsor and Eton	A
Wisbech	A2
Witham	A1
Woking (District)	A1
Wokingham	A2
Wolverhampton C.B.	A
Woodbridge	A2
Worcester C.B.	A
Workington	A
Worksop M.B.	A
Worthing	A2
Wrexham (incl. Ceftn)	A
Wroughton	A1
Wylam	A
Wymondham	A2
York	A

*For Birkenhead, Liverpool and London the rates are:—Craftsmen, 3s. 10½d.; Labourers, 3s. 5d. In the case of London the rate beyond the 12-mile radius is:—Craftsmen, 3s. 10d.; Labourers, 3s. 4½d. †Plus 2d. per working day. ‡This is the County rate and applies except where higher grades are stated.

NOTE.—Carpenters and Joiners providing own tools when employed in establishments operating under the Supplementary Rules for Woodworking Factories and Shops, receive 2d. per day; when employed on other building industry work, 4d. per day.

WOMEN'S RATES.—In all districts throughout the country the rate of wages for women engaged in craft processes is 2s. 8d. per hour. Women introduced to carry out work other than craft processes, 2s. 4d. per hour.

For Building Trade Wages in Scotland see page 682

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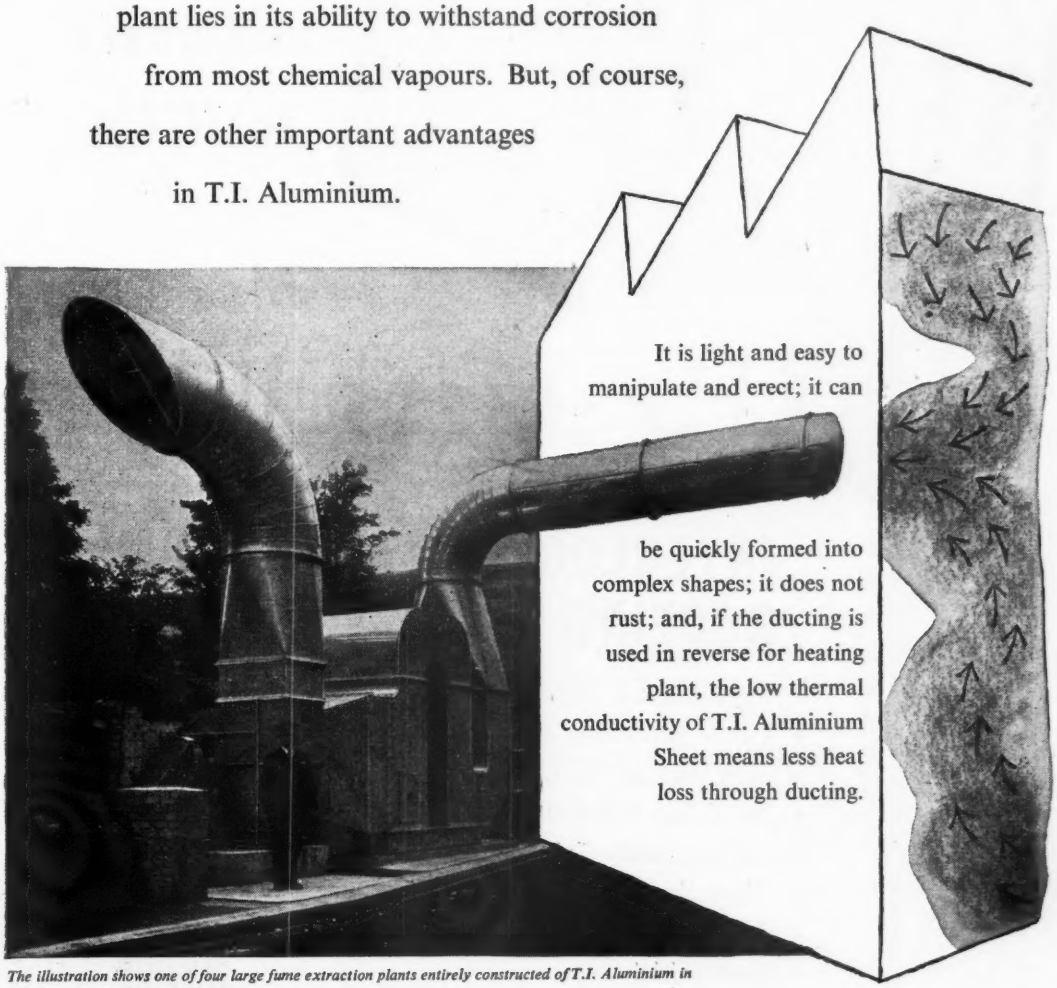

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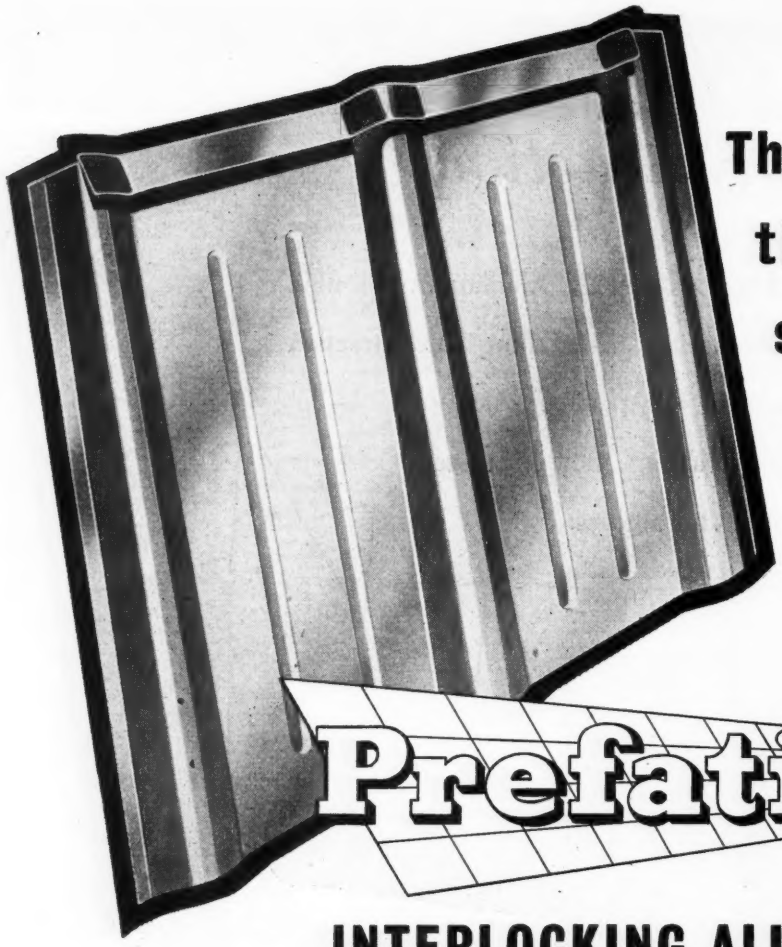

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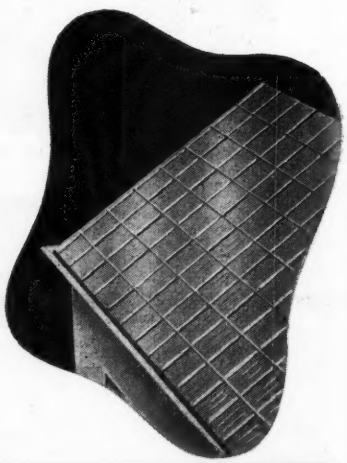

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CARPENTERS' COMPANY

Annual Prizegiving

MR. R. S. WILLIAMS, president of the London Master Builders' Association, distributed awards to students of the Carpenters Company's Building Crafts Training School at a prizegiving ceremony held at Drapers' Hall, Throgmorton-street, EC2, on Monday (October 18). Lt.-Col. W. W. Dove, CBE, Master of the Carpenters Company, presided.

After distributing the prizes, MR. WILLIAMS addressed the students present. He told them that the careers before them promised to be full of interest and adventure. No one could expect to get far in the building industry unless he was technically qualified, he said. Without proper training it was not possible to derive full enjoyment as a craftsman should out of his work. Neither was the untrained man in a position to contribute to the efficiency of the industry.

He recalled the great traditions of the Carpenters' Company and said it was the duty of the young generation of craftsmen to maintain and extend them. Mr. Williams then went on to point out how the whole community was dependent on builders and building craftsmen. Factories, power stations, bridges, houses, cinemas and all other types of buildings had to be erected by builders before they could serve the community. He reminded the students that future generations would judge them by the kind of work they produced.

In his report, MR. H. G. TILLEY, LRIBA, FRICS, Director of the Building Crafts Training School, stated that there would be a continuing need in the future for thoroughly trained craftsmen in all branches of the industry.

The education of apprentices was to-day regarded as a most important object in the educational system of this country and there was no excuse for an apprentice to be ignorant in the theory of his craft if he seized the opportunities which were open to him.

"The students we want at our school are those who intend to rank as first-class craftsmen and, believe me, there are never enough of these," he declared.

At the end of the meeting, LT.-COL. DOVE announced that the Carpenters' Company had introduced a new examination open to carpenters and joiners in all parts of the country who were over 21. A silver medal would be awarded to successful candidates who, if they wished, could also become freemen of the Company.

OVERSPILL TOWNS

Private Enterprise Scheme

A START is to be made at once on building by private enterprise 2,000 houses on the outskirts of Leicester to help take the city's overspill population.

Two new communities, to be known as the Glenfield Frith and Brockshill Estates, will come into being. The former will link Glenfield Village with the New Parks Estate and the latter will be to the right of the dual carriageway from Leicester connecting with the village of Oadby.

Both estates will occupy an area of 90-95 acres, and between 500-600 workmen will be employed on their construction for the next three years.

Each estate will be entirely "self-contained," with shopping centres and parking areas. At Oadby a manse and church hall are also scheduled.

NEWS IN BRIEF

MINIATURE CINEMA

A fully equipped cinema in miniature for showing 16mm and 35mm films has been built by the Gas Council in Gas Industry House, 1, Grosvenor-place, SW1. It is believed to be the smallest in the world, and what was originally an office has been converted into an attractive cinema where 20 people can see and hear films in conditions comparable to a modern large cinema. The cinema was designed by the Gas Council's exhibitions department in conjunction with the films department and the contractors, David Esdaile and Co., Ltd. It is available to outside organisations by arrangement with the films department.

MODULAR CATALOGUE

The first issue of the Modular Catalogue is planned to appear in November. It will be published by the Modular Society, 22, Buckingham-street, WC2, and will be on sale to the public. The first issue, which will comprise about a dozen sheets of introductory information and modular products, will be contained in a loose-leaf binder to take the issues of the ensuing 12 months. Subsequent issues will chiefly consist of sheets each presenting one product that conforms to the 4-in. module and is now available for building. The total number of sheets in the first year is expected to be about 100. Industrial subscribers to the Modular Society are invited by the Society to submit particulars of their modular products for inclusion in the Modular Catalogue.

NORWEGIAN PROFESSOR'S VISIT

Mr. Laerum, Professor in Highway and Railroad Construction at the University of Technology, Trondheim, Norway, accompanied by Mr. Aasrud, director, and Mr. Saxegaard, chief technical executive of Fjeldhammer Brug, arrived in this country on October 15 on a business visit. Professor Laerum has been for the last four years technical director of FAD (Construction Department of the Norwegian Ministry for Defence) and in charge of the construction of a number of large airfields and defence works under the NATO programme in Norway. He is specially interested in seeing and learning about jet-proof resistant materials for joints, and for the surfacing of bituminous pavements on airfields. Fjeldhammer Brug are distributors for Expandite, Ltd., products marketed in Norway.

SOHO REDESIGNED

To stimulate thought and imagination in the uses of new building materials Pilkington Brothers, Ltd., glass manufacturers, of Selwyn House, Cleveland-row, SW1, have formed a "Glass Age Development Committee" of which the members are Mr. G. A. Jellicoe, FRIBA, Mr. Edward D. Mills, FRIBA, and Mr. Ove Arup, CBE, MICE. The Committee has been asked to draw up plans for the imaginary redesigning of a number of areas, using the techniques and materials now available. The first project to be produced shows what a redesigned Soho might be expected to look like in 2000 A.D. The area has been roofed-over providing an air-conditioned pedestrian precinct below and a garden above. The existing roads have been roofed in glass, forming a chain of glass-bottomed canals through which the light will filter. Accommodation for Soho's now doubled population will be provided by six glass-faced, 24-storey, Y-plan blocks of flats.

CIVIC CENTRE, PLYMOUTH

In the illustrated article on the proposed civic centre at Plymouth which appeared in our last issue, Mr. L. Belam, one of the architects engaged on the scheme, should have been described as an associate of the RIBA.

LOCAL PLANNING

Representatives of local planning groups throughout the British Isles are meeting together at the Planning Centre, 28, King-street, WC2, to-morrow (October 23), to discuss their activities in the field of local planning. Seventeen of these societies have prepared papers for the conference on their past work and future activities. By this exchange of information and ideas the conference hopes to stimulate the interest of the many local groups which are known to exist and to encourage the formation of further groups in other areas.

FORD EXPANSION PROGRAMME

Sir Patrick Hennessy, deputy chairman and managing director of Ford Motor Company, Ltd., this week announced a £65m. expansion programme which in the next five years will increase the company's floor space by about 4m. sq. ft. The programme includes the construction of a new foundry and press shop, and large expansion to manufacturing and assembly facilities. The immediate programme includes the development of satellite factories around Dagenham, including machine shops at Basildon New Town, a spare-parts depot at Aveley, Essex, and certain buildings at Woolwich Arsenal.

LEAD PLUMBING LECTURES

Lectures and demonstrations on lead plumbing during the coming winter are to be given by Mr. L. E. Allen, MRSanI, of the Lead Sheet and Pipe Council. Although most dates up to the end of 1954 are filled, there are still some available during the early months of 1955 and applications for this facility from technical schools, building and plumbing organisations are invited, particularly for demonstrations of leadburning for which all equipment (including oxygen and acetylene) is provided by the Council. Applications are also being invited for the free loan of copies of the Council's new film "Lead for Building." This is in 16mm. sound type, Part I in black and white, Part II in colour, and takes about 35 minutes to project. Applications to the Secretary, Lead Sheet and Pipe Council, Eagle House, Jermyn-street, SW1.

PERSONAL COLUMN

MR. BRIAN M. SAVORY has been transferred from the headquarters sales staff of Taylor Woodrow (Building Exports), Ltd., marketing agents for Arcon prefabricated structures, Welbeck-street, London, W. to Kuala Lumpur, Federation of Malaya. There he will be resident representative for British territories in the Malayan area.

MR. H. W. ROBERTS, AMIEE, manager of the Blackburn branch of the General Electric Co., Ltd., has retired. He is succeeded by MR. H. F. NORTH, formerly GEC branch engineer at Sheffield.

Expandite, Ltd., have announced the following appointments: MR. R. A. KING as area manager based on London; MR. A. BURN as area manager covering the northern area; and MR. R. BELL as area manager covering the western area. These appointments follow the recent engagement of MR. T. POOLEY as sales manager.

MR. A. J. BETTS, AMIEE, has been appointed general sales manager of Enfield Cables, Ltd., and will be responsible to the sales director for the company's home and overseas business.

Pilkington's Tiles, Ltd., have announced that MR. DAVID G. FILDES, of Manley Knoll, Manley, Cheshire, has been appointed a director of the company.

The Villiers Engineering Co., Ltd., Marston-road, Wolverhampton, have appointed MR. WILLIAM KAY as their Scottish representative.

TRADE NEWS

EJMA MEMBERS

At a recent meeting of the Council of the English Joinery Manufacturers' Association, with the president, Mr. W. E. Adams, JP, in the chair, Messrs. William Ivens and Sons (Timber Merchants), Ltd., 26, Market-place, Rugby, and Messrs. W. Marsden and Co., Ltd., of Londesborough-street, Hull, were elected members of the Association.

SANITARY FITTINGS

A joint exhibit has been arranged at the Building Trades Exhibition, Manchester, by Conex-Terna, Ltd., of Great Bridge, and Sanbra, Ltd., of Birmingham. It covers a wide range of sanitary fittings and other plumbing material, and shows a full range of various types and designs of kitchen and bathroom fittings, including the Sanbra "Easilyne" range of basin and bath taps. In addition to the "Conex" and "Conexcel" fittings for copper pipes are the new lightweight fittings for waste pipe installation.

PILES DISPLAY

The exhibit of the Franki Compressed Pile Co., Ltd., 39, Victoria-street, SW1, at the Manchester Building Trades Exhibition, is built round an actual "Frankipile" that has been installed in a recent contract and subsequently excavated for exhibition purposes. At intervals during the course of the exhibition a film is being shown on the stand, showing the method employed in installing such a pile as that on view. Another section of the stand has been devoted to the Franki bored pile, and photographic illustrations depict some of the types of structures that have been founded on "Frankipiles," including power stations, factories, blocks of flats and other types of domestic and industrial buildings.

FLUSH DOOR DISPLAY

F. Hills and Sons, Ltd., Norton-road, Stockton-on-Tees, have devoted the major part of their stand at the current Building Trades Exhibition, Manchester, to a display of flush and panel doors. A special feature has been made of the "Aristocrat," with the patented "Kreibord" core, which is available faced with selected mahogany, walnut or oak veneers suitable for polishing. Another door is faced with decorative plastic and is intended for kitchens, bathrooms, etc. Of special interest is the "Ambassador," a bolectin-mould single-panel door faced with West African mahogany veneers suitable for polishing. One of Hills' specially-treated wood casement windows is also being featured, subjected to simulated rainfall.

PLOUGHING UP THE STRAND

Television viewers will recently have seen newsreel shots of the Strand being "ploughed" by an enormous implement standing 6 ft. 6 in. high. The wooden blocks are ripped up by the 7 ft. long share, which cuts a swathe about 3 ft. wide. It is pulled by a Merton "Overloader" which then loads the blocks into high lorries. This is one of the methods used by the Limmer and Trinidad Lake Asphalt Co., Ltd., under contract to the Westminster City Council, to speed the re-laying of road surfaces in busy London streets. As with all the company's Merton "Overloaders," this machine has been supplied by Mackay Industrial Equipment, Ltd., of Feltham, Middlesex, fitted with a full width bucket specially designed for lifting wooden road blocks.

OVERSEAS BUILDING

[*From Our Own Correspondents*]

Australia.—The University of Melbourne has a number of plans for extensions. An International House is to be constructed to house 120 students in single bedroom-study units. Architects working on the project are: Messrs. Raymond Berg and H. L. Waugh and Leighton, Irwin and Co., of Melbourne. A physical education centre is also to be built for the University. . . . The £1¼m. chemical factory being erected at Caringbah on the southern shores of Botany Bay is nearing completion. The factory stands on a 27-acre site and it will be the most modern pharmaceutical plant in the Southern Hemisphere.. The production centre will be a building 550 ft. long, 330 ft. wide. Total floor space will be 65,000 sq. ft. The architects dealing with the projects are Messrs. Spencer, Hanson and Blackman. . . . Other University building news comes from Sydney where an atomic research laboratory is being built 50 ft. underground.

Adelaide's largest building, a 12-storey structure on the corner of Gawler-place and Grenfell-street, is to go into construction shortly. Plans have been finally completed and materials are now being purchased. The building, to be known as St. Peter's College, will cost £900,000. Tenders for this construction job are expected to be invited around November-December. The architects are Messrs. Woods, Bagot, Laybourne-Smith and Irwin. . . . The town of Pittsworth on the Darling Downs is to launch a £150,000 building plan which will eventually make it one of the most attractive towns on the Downs. Included in the allocation of money is £30,000 for a new cinema; a civic centre will cost £35,000 and a memorial hall will cost £6,000. Other buildings will include an hotel which is to be built on the site of the one recently destroyed by fire.

Work on one of the major projects in Australia's huge Snowy Mountains hydro-electric scheme, the Eucumbene-Tumut tunnel will start in about two or three weeks' time. A spokesman for the US construction company, the Kaiser group, which has the contract for the tunnel, said that excavations had been going on during the past weeks in preparation for the opening of the Eucumbene end of the tunnel about the middle of this month. . . . The company has built new workshops at Eucumbene where about 20 US engineers and 300 Australian workmen are assembling ready for work. . . . The Kaiser company has a contract for £25m. for the construction of the major tunnels in addition to a tunnel and dam at Tumut Point. The whole job is expected to be completed by 1960.

Burma.—The Government of Burma is to foster the growth of the tobacco industry by building new factories, chemical laboratories and other buildings at Rangoon and Mandalay at an estimated cost of £135,000. . . . The State Industrial Research Institute is expanding its Metallurgy and Geology Research Department. The programme provides for the construction of a well-equipped laboratory which is now under way. A specialist from the Armour Research Foundation at Chicago has arrived at Rangoon to speed up the expansion of the programme.

Kenya.—The first cement works in Kenya, the British Standard Portland Cement Co. at Bamburi, is now in production. The cement is 20 per cent. cheaper than cement imported from the UK and elsewhere. The annual output is eventually estimated to be 120,000 tons. . . . A £100,000 cinema is to be built in Nairobi.

New Zealand.—A tender for £3,465,000 by two North-East concerns has been formerly accepted for the construction of a 3,520 ft. long bridge across Auckland Harbour, New Zealand. Acceptance is subject to the approval of various local bodies and of the New Zealand Government. The concerns whose contract was approved by the Harbour Bridge Authority are Dorman Long and Co., Ltd., Middlesbrough, and the Cleveland Bridge and Engineering Co., Ltd., of Darlington. The contract provides for completion of the bridge within 44 months. Tenders for the bridge were first sought in June, 1952. A few months later the tenders of two concerns were provisionally accepted, but financial difficulties arose, causing the total estimated cost of the bridge and approach work to be reduced from £8m. to £5m. A spokesman of Dorman Long and Co. said that as soon as official confirmation was received the preliminary work would start. The cost of the approach work and the various other costs would bring the total sum involved to about £5m.

New Zealand.—The New Zealand Minister of Agriculture, Mr. Holyoake, has announced that a new dairy laboratory is to be erected at the Animal Research Station, at Wallaceville, Wellington. The new laboratory will cost some £20,000 and will help in research into all kinds of dairy products. No details have as yet been published regarding tenders for this project. . . . New Zealand's biggest single housing project, the Tamaki state-sponsored scheme in Auckland, begun in 1946, is nearly completed. Of the 5,000 homes planned there, 4,200 have been completed, are under construction or about to be built. The Ministry of Works will have spent £15m. at Tamaki when the scheme is finished and there will be 20,000 people living in the area. . . . The Ministry of Works has now under review other plans for the building of houses and flats. Although information is at present

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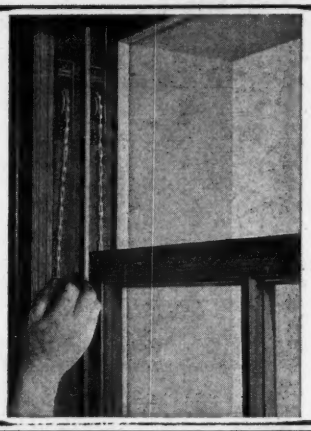

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negligible, direct inquiries should yield fruitful results. Several housing schemes are necessary as a result of immigration, and all important centres are drawing up their own housing plans.

Nigeria.—An agreement which will lead to the establishment of a cement factory at Nkalagu, near Enugu, in the Eastern Region of Nigeria, was signed by Mr. R. Njoku, Nigeria's Minister of Commerce and Industries, on August 23. The other parties to the agreement are two British companies: F. L. Smidth and Co., Ltd., who will supply the cement-making machinery and act as consulting engineers for the construction of the factory, and the Tunnel Portland Cement Co., Ltd., who will act as managing agents. Preliminary work on the site will start almost at once. The factory will have a capacity of some 100,000 tons of cement a year. The estimated cost of the scheme is £2m.

Southern Rhodesia.—The largest single contract for housing ever placed in Southern Rhodesia has been secured by the well-known firm of Laing and Roberts. The contract, worth about £430,000, is for the building of 2,800 houses for natives in the Bulawayo area. The Bulawayo Council also has plans for three hostels, two recreation halls and other buildings near by. . . . The Rhodesian firm of B. Chadwick, Ltd., recently established, has secured a contract for the erection of an Infectious Diseases Hospital in Umtali. The site is at the Allan Wilson and Salisbury roads. The initial stages have been put into operation.

There is also news of a museum to be built in Bulawayo on the Fort-street side of the old Memorial Hospital. The building will cost £125,000. Three galleries will be built to begin with at a cost of £20,000. Bulawayo is still trying to achieve the honour of becoming the new capital for the new Federation of Rhodesia and Nyasaland. A suggested plan has already been drawn up by the City Architect for a group of Government buildings on the magnificent site of the Centenary Exhibition. . . . The Carlton Hotel, one of the better-known in Bulawayo, is to be demolished and a new hotel is to be constructed on the vacant site. . . . Messrs. Kingston, Ltd., of Ndola, are to have a new £50,000 building erected in Cecil-avenue, Ndola.

Latest reports show that the cost of the much-publicised Ndola hotel which is to be built shortly will be in the region of £400,000 rather than £100,000. The firm of contractors, Richard Costain, Ltd., are said to be putting £100,000 into the project. . . . Salisbury's building plans are approaching the £4m. mark Taken together they can be split up as follows: £1,025,000 for domestic construction, £1,499,000 for commercial construction, and £426,000 for industrial premises.

Roan Antelope Copper Mines, Ltd., and Ndola Copper Refineries, Ltd., announced recently in Lusaka that the £3m. capital estimated to be required for the construction by the latter company of an electrolytic copper refinery at Ndola will be provided, one-third by the British Insulated Callender's Cables, Ltd., and two-thirds by the Roan Antelope Copper Mines, Ltd. The capacity of the refinery will be 55,000 to 60,000 tons. The plans for the refinery are now being drawn up and details will be obtainable from the companies concerned.

Uganda.—A new service now being operated by the Uganda Credit and Savings Bank will enable Africans to obtain loans to build themselves houses. The bank will grant loans of up to 80 per cent. of the cost of the houses to Africans who want to build at Ntinda. Elsewhere loans of up to 50 per cent. will be granted.

USA.—An interesting trend in US urban development is the sale by railway companies of the "air rights" over their railyards in the hearts of large cities so that office skyscrapers, industrial buildings, hotels, department stores and garages may be built on stilts above the tracks. All the year air-conditioning systems make the use of such building sites practicable. The most spectacular development of this kind to date is the sale by the Illinois Central Railroad of the "air rights" over part of its 80 acres of tracks in Chicago to the Prudential Insurance Co. of America for construction of a $40m. office building. To be Chicago's tallest, the 601-ft. Prudential building is already well advanced in construction and is due to be completed in 1956. New York, Washington, Boston, Atlanta and Cleveland are other cities where builders are pinning their hopes for skyscrapers on stilts. The firm of Webb and Knapp, Inc., wants to build the world's biggest commercial building over the Pennsylvania Railroad tracks in New York's Manhattan district. The syndicate that bought the Empire State Building in New York is planning a $75m. group of buildings on a 30-acre site over the Boston and Albany Railroad yards in Boston, to be called the Back Bay Centre. It will include an hotel, an office building, 1m. sq. ft. of store space, a convention hall, a supermarket, and a garage for 2,300 cars.

Venezuela.—The Minister of Finance has announced that a salt refinery is to be established in the near future. It is understood that it will be built in Araya. Plans are now being drawn up and tenders will be invited during next year. . . . A group of 25 technicians has been appointed by the Ministry of Mines and Hydrocarbons to study the setting up of four petrochemical plants forming the nucleus of a petrochemical industry which is to produce fertilisers and other by-products. Latest details of these projects will be announced in the near future and it is probable that firms of international repute will be asked to submit designs.

It is expected that the large military hospital which is to be constructed in the near future will almost definitely be constructed by native concerns. This hospital will have 17 floors and contain 1,000 beds. There should, however, be much scope for British manufacturers of materials, and the British Commercial Attaché at the Embassy in Venezuela will be pleased to pass on all available details to firms in this country interested in making offers to the builders, names of which are yet to be announced. The project is said to be worth about £5m.

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*The Patterson Sales Co., 618, East Yandell Boulevard, El Paso, Texas, USA, are interested in hearing from UK firms able to supply woodworking bandsaw blades and highest grade industrial jacks.

Mr. D. M. Patterson, the owner of the company, plans to visit the UK this autumn and would like to receive catalogues of the items mentioned before he leaves the United States so that, during his visit, he may call on any firms that appear to be suitable.

Firms interested in this inquiry should write direct to Mr. Patterson by air mail, quoting prices in US dollars (cif Houston) and including full details regarding delivery, etc. Telephone inquiries to Chancery 4411, ex. 776, quoting ref. ESB/20944/54.

AUSTRALIAN CONTRACT

Mr. G. Mezey, managing director of International Engineers, Ltd., of Canberra, Australia, is visiting London for a short time. He will be pleased to meet contractors and manufacturers specialising in prefabricated constructions. Mr. Mezey is at present interested in a large Australian housing scheme intended to house government workers. The scheme will comprise a number of 8-storey blocks. He is seeking a type of design and construction method suitable for Canberra conditions. He also intends to visit prefabricated housing manufacturers in West Germany, France, Italy and Sweden. British prefabrication experts can contact Mr. Mezey through Australia House, Strand, WC2.

COMPETITION IN URUGUAY

The importance of British industry sending personal representatives to meet trade competition in the South American Republic of Uruguay is stressed in a publication issued recently by the Board of Trade. The publication is called "Uruguay—Economic and Commercial Conditions in Uruguay," and is published by HM Stationery Office, price 3s. 6d.

NEW ZEALAND LABOUR NEEDS

New Zealand needs at least 500 more plumbers, 200 more electricians and 500 more painters and decorators if the target of 20,600 new houses a year is to be realised, in addition to commercial building and maintenance work. These estimates are given in an interim report by a subcommittee set up by the National Housing Council for New Zealand.

* From the Board of Trade Special Register Information Service.

The SCOTTISH BUILDER

Repairs and Rents

FURTHER guidance on the new Repairs and Rents Act is given in a comprehensive handbook, "Repairs and Rents: A Handbook of the Housing (Repairs and Rents) (Scotland) Act, 1954," which has been published recently by HM Stationery Office, Edinburgh, price 9d.

The new handbook is intended for those who are in a position to give advice or who want more detailed information than is given by the blue booklet ("Repairs and Rents: How the 1954 Scottish Act Can Affect You"), that has been on sale for some weeks.

Research Laboratories

NEW LABORATORIES at Crewe Toll, Edinburgh, erected for Ferranti, Ltd. (acting as agents for the Ministry of Supply), to implement the Scottish Council's scheme for the development of electronics in industry in Scotland, were opened recently by the Duke of Edinburgh. The building was completely occupied and services installed 21 months after building work commenced.

Glenrothes Appointment

THE Glenrothes Development Corporation has appointed Mr. Stewart Murray, ARICS, of Richmond-road, Ilford, Essex, as the Chief Quantity Surveyor.

Gift to Cathedral

MR. WILLIAM WATSON, RSA, Edinburgh, has given a stained-glass window to Brechin Cathedral. It will be installed in the west window of the vestry.

Water Tower for Glasgow

GLASGOW CORPORATION WATER DEPARTMENT is to build a one-million-gallon, 132 ft. reinforced concrete water tower at Garthamlock to cover the needs of a housing area with an ultimate estimated coverage of 10,000 houses. The new tower will be supplemented by a ground-level three-million-gallon reservoir tank. The new tower will be the largest elevated water tower yet constructed by the city and will take about two and a half years to complete, its construction being timed to coincide with the building of the houses in this area. Work has begun on the preparation of the site.

Dounreay Architect Appointed

THE United Kingdom atomic energy authority have appointed Mr. Hugh S. MacDonald, ARIBA, to be architect for the 200 houses to be erected at Thurso to accommodate staff of Dounreay atom plant.

He will be responsible for layout of the site, design of the houses, and general organisation of the scheme. Mr. MacDonald has been architect in charge of the structural alterations carried out during the past year at the Queen Mother's Castle of Mey.

General Foremanship Course

THE first Scottish two-year full certificate course in general foremanship studies following the recommendations and syllabuses of the Standing Committee for the Training of General Foremen in the Building Industry was recently opened at the Heriot-Watt College, Edinburgh, by Mr. Robert Smith, of Edinburgh. Mr. Smith is the Scottish National Federation representative on the Standing Committee.

The course will extend over two evening sessions and will meet twice weekly. Mr. N. C. Sidwell, MSc, head of the Department of Building, in co-operation with Mr. J. Gloag, BCom, head of the Commerce Department, have organised a panel of course lecturers composed of general foremen, site agents, contractors, quantity surveyors and other specialists.

Lectures will be given on site administration and control, site organisation and method, personnel administration and surveying practice. A period for discussion will be set aside after all lectures.

NEW BUILDINGS

Aberdeen.—Corp. has had plans prepared, which have been approved by the Dept. of Health for Scotland, for the conversion of "Thorngrove House," Great Western-rd., West Aberdeen, at an est. cost of £42,000, into an old people's home. The architect is Alexander B. Gardner (F), Broad-st., The Castlegate, Aberdeen.

Airdrie.—Corp. has had plans prepared and approved for 190 houses, plus 12 for old couples, to be erected at the housing sites of Burnfoot and Craigneuk. The council A is Harry Shaw (F), Master of Works Offices, Bank-bldgs., Graham-sq., Airdrie.

Ayr.—Plans are in the hands of their own architects for a new bank which the Governors of the Bank of Scotland, The Mound, Edinburgh, intend to construct on a site at the Burn's Station-sq.

Clackmannanshire.—Plans have been prepared and approved for new houses at Hilton-rd. housing site. The architect is J. Austin Bent (A), 15, Palmerston-pl., Westend, Edinburgh.

East Kilbride.—Lanarkshire CC has plans in hand for new houses to be erected at the Murray housing site. The architect is Samuel MacColl (A), County-bldgs., Beckford-st., Hamilton West.

Edinburgh.—Plans have been prepared for the South-Eastern Hosp. Bd. of Scotland, for the approval of the Sec. of State of Scotland, for the new five-storey additions and extensions, est. to cost £300,000, as a neuro-surgical dept. at the Western Gen. Hosp., Crewe-rd. The designs are by the Board's own architectural staff. Mr. J. Holt (F), Chief Architect, 8, Drumshough-gdns., Westend, Edinburgh.

Fifeshire.—Plans prepared and approved for over 200 houses at Aberlour-rd. housing site, Dunfermline. The architect is J. Austin Bent (A), 15, Palmerston-pl., Westend, Edinburgh.

Glasgow.—Plans prepared and approved for the erection of new extensions at the Glasgow Univ. buildings. The architects are John Keppie & Henderson & Gleave (F&A), 21, Woodside-pl., Charing Cross, Glasgow.

Glasgow.—Plans prepared for J. & S. Caldwell, Ltd., have been approved for their alterations and additions at Roebank-st., Millend. The architects are John Laird & Son (F&A), 87, St. Vincent-st., Blythswood, Glasgow.

Glasgow.—Plans prepared and approved for new housing scheme which is to be erected at the Arden housing site, Maryhill. The architect is J. Austin Bent (A), 15, Palmerston-pl., Westend, Edinburgh.

Glasgow.—Plans prepared and approved for new boilerhouse buildings for R. Paterson & Sons, Ltd., of Charlotte-st., to be erected at Greendyke-st., Calton. The architects are James Taylor Thomson, MacCrae & Saunders (F&A), 212, Bath-st., Glasgow.

Glasgow.—Plans prepared and approved for alterations to the premises of Slater, Rodger & Co., Ltd., Scotland-st. The architects are the staff of the Distillers Co., Ltd., 64, Waterloo-st., Glasgow.

Glasgow.—Plans prepared and approved for a scheme of extensions and additions to Wellington Church of Scotland, University-ave., Hillhead. The architect is Alexander Wright (F), 110, Blythswood-st., Blythswood-sq., Glasgow.

Glenrothes.—Plans approved for composite block for town centre comprising shops, offices, bank and houses. Architect: Mr. Peter Tinto (A), Chief Architect and Planning Officer, Glenrothes Dev. Corp., Glenrothes, Fife. Quantity surveyor: Mr. George Cubbage, ARICS, 137b, South-st., St. Andrews, Fife.

Inverness.—Plans prepared and approved for the new Pædiatric Unit to be erected at the Inverness-shire Rigmore Hosp. for the Northern Hosp. Bd. The architect is D. Polston Hall (F), Rigmore Hosp. Buildings, Inverness, and the quantity surveyors W. M. Suter & Jaffray, FF.RICS, The Queensgate, Inverness.

Inverness.—Plans prepared and approved for the new church hall at the district of Hilton. The architects are Alexander Ross & Son & Mitchell (F&F), The Queensgate-chbrs., Inverness.

Lanarkshire.—Plans have been prepared and approved for extensions to the Dev. Corp.'s workshops at the Headhouse Farm site. The architect is Frank Scott (L), Torrence House, East Kilbride.

Lanarkshire.—Plans have been prepared and approved for new canteen, etc., to be erected at Rowantree-ave., Newhouse Industrial Estate. The architects are the Scottish Industrial Estates, Ltd., 3, Woodside-pl., Woodlands-rd., Charing Cross, Glasgow.

Lanarkshire.—Plans prepared by their own staff architects have been approved for new buildings to be erected at Glasgow-rd., East Kilbride, for Mavor & Coulson, Ltd., 47, Redan-st., Crownpoint-rd., Glasgow.

Lanarkshire.—Plans prepared and approved for new garage and workshops, also storage buildings, etc., at Law. The architect is Maxwell Muir, 84, Brownlea-rd., Law.

Law.—Lanarkshire CC has had plans prepared for the first dev. of the new Lawmour housing site, consisting of 64 houses. The architect is Samuel MacColl (A), County-bldgs., Beckford-st., Hamilton West.

Nairn.—Plans prepared and approved for the new Nairnshire Eventide Home. The architects are Alexander Ross & Son & William W. Mitchell (F&F), Queensgate-chbrs., Inverness.

Perthshire.—Plans prepared by the architects of the Perth Nat. Trust of Scotland for a reconstruction and addition scheme on the Cathedral-sq. area of Dunkeld, at an est. cost of £9,000, have been approved.

Ross and Cromarty.—Plans prepared and approved for scheme of 36 houses to be erected on a Dingwall housing site. The architect is Duncan Mathieson (F), Tulloch-st., Dingwall, and the quantity surveyors Baxter, Dunn & Grey & Tuach (FF.RICS), High-st., Inverness.

Rutherglen.—Plans prepared by their own staff architects have been approved for the new extensions to their factory at Clydesdale Works, Lanarkshire, for Riverside Iron & Engineering Co., Ltd., Dowanbrae-rd., Rutherglen.

SCOTTISH BUILDING TRADE WAGES

FOLLOWING are rates of wages authorised by the Scottish National Joint Council as from May 24, 1954. They apply to the whole of Scotland, including the islands of Orkney, Shetland, etc.

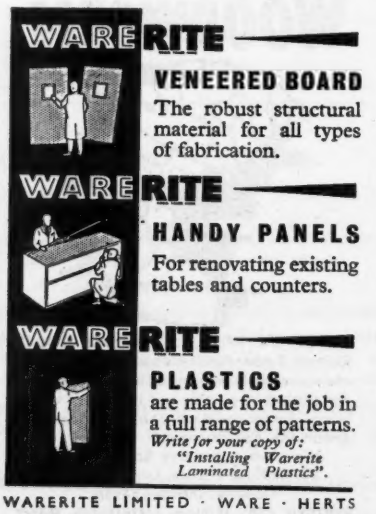
Grade A: Craftsmen, 3s. 9d.; Labourers, 3s. 3½d.

For apprentices, the rates are:

Year.	Percentage of Craftsman's rate.	For week of 44 hours. s.	d.
1st	25	41	3
2nd	33½	55	0
3rd	50	82	6
4th	66½	110	0
5th	75	123	9

For female labour, the rates are:

	s.	d.
Operatives on craft operations (at end of probationary period)	3	3½
Operatives on labouring operations (at end of probationary period)	3	0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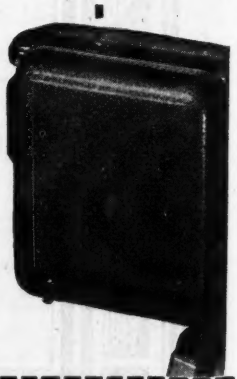

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CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

OCTOBER 27.

***†Hants Police Authy.**—Police house, Hythe, near Southampton. County A, Winchester. Dep. £1 1s.

OCTOBER 28.

***†Denbighshire CC.**—New school, Chirk, near Wrexham. County A, Grove Park, Wrexham. Dep. £3 3s.

OCTOBER 29.

***†Essex CC.**—Schoolkeeper's house, Hassenbrook cty. sec. sch., Stanford-le-Hope. County A, Chelmsford.

***†Market Drayton UDC.**—29 houses at Salisbury Hill View, Dalelands estate. W. B. Bond, FRICS, Windsor House, 49-50, Calthorpe-rd., Edgbaston. Dep. £2 2s.

OCTOBER 30.

***Essex CC.**—Fire station, Harlow New Town. H. Conolly (F), County A, Chelmsford.

***†Northumberland CC.**—Home for aged persons, Wallsend-rd. welfare centre, Bedlington. County A, Newcastle-upon-Tyne, 1. Dep. £2 2s. each.

NOVEMBER 1.

***†Bristol Corpn.**—Additional classroom extension, Glenfrome-rd. primary school. City A. Dep. £2 2s.

***†East Suffolk CC.**—Police house, East Bergholt. County A, Ipswich. Dep. £2 2s. Tenders by November 26.

***†Paignton UDC.**—60 flats and maisonettes, either as one or two separate contracts. Clerk of Council. Dep. £2 2s. each contract.

***†Southampton CBC.**—36 flats, St. James-rd. BE. Dep. £2 2s.

***Walsall BC.**—64 houses at Gipsy-la. estate. TC. Dep. £2 2s.

NOVEMBER 2.

***†Cambridge City C.**—Six shops and 28 flats, Austey-way, Trumpington. City S. Dep. £2 2s.

***†Enfield UDC.**—24 flats, branch library and community hall on Bullsmoor-la. estate. E&S. Dep. £2 2s.

***†Enfield UDC.**—24 flats and 64 houses on Manor Farm site. E&S. Dep. £2 2s.

***Kingston-upon-Thames BC.**—Conveniences, Latchmere recreation ground and extension to sports pavilion, Kings Field. BS. Dep. £2 2s. Tenders by November 16.

***†Northants CC.**—Adaptation and alterations, Lodge Farm, Potterspury. County A, Northampton.

***†Wilts CC.**—Practical room and store at Westcott Sch., Swindon. Clerk of CC. Dep. £2 2s.

NOVEMBER 3.

***†Hampstead BC.**—80 flats and maisonettes, Fellows-rd. TC.

***†Hayes and Harlington UDC.**—14 dwellings, Botwell-la., Park Farm estate. E&S.

***†Shrewsbury BC.**—Caretaker's house and general site work, Attested Block, New Cattle Market. BS. Dep. £2 2s.

NOVEMBER 5.

***Grantham BC.**—Three bungalows, Sharpe-rd., and 2 bungalows off Harrowby-la. BE&S. Dep. £2 2s.

***†Norfolk EC.**—Aylsham sec. mod. sch. Chief Educ. Officer, Stracey-rd., Norwich.

***†West Sussex CC.**—Pair of cottages at Kingsham Farm, Chichester. County A, Chichester.

NOVEMBER 6.

***†Bromley BC.**—66 flats at Blyth-rd., Bromley. BE. Dep. £2 2s.

NOVEMBER 7.

***†Tottenham BC.**—Six flats at Asplins estate. BE&S. Dep. £2 2s.

NOVEMBER 8.

South Shields TC.—124 houses at Whitleas estate. BE. Dep. £2 2s.

NOVEMBER 9.

Norfolk CC.—Three district nurses' houses and two police houses on various sites. County A, Norwich.

NOVEMBER 10.

St. Ives RDC.—Eight houses with site works at Pidley. Lea, Milner & Wardley, architects, 4, Market-hill, Huntingdon. Dep. £2 2s.

NOVEMBER 11.

***Harrow BC.**—11 garages, Rayner's-la. estate. BE&S. Dep. £2.

***Lowestoft BC.**—Additions to cloakroom accommodation and installation of central heating, St. Andrew's School. BE, 49, High-st. Dep. £2 2s.

NOVEMBER 12.

***North Riding BC.**—County prim. sch., Eastfield, Scarborough. W. W. Atkinson (A), 4, Raymond-bldgs., London, WC1.

***Sheffield City C.**—County primary sch., Broadway. City A. Dep. £2.

NOVEMBER 15.

***Aireborough UDC.**—Branch library, Otley-rd., Guiseley. E&S, Micklefield House, Rawdon, near Leeds. Dep. £2 2s.

***Morley BC.**—(1) 44 houses, (2) 20 houses, on the Dean Hall estate, Asquith-ave. M. H. Brook, ARIBA, National Provincial Bank-chbrs., Queen-st., Morley. Dep. £2 2s. each contract.

NOVEMBER 16.

***Seaton UDC.**—Bowls pavilion, Seafield. S. Dep. £2 2s.

NOVEMBER 17.

***Guildford BC.**—12 pairs of houses, Park Barn. BE&S. Dep. £2 2s.

NOVEMBER 22.

***Rochdale CB.**—Three blocks of shops and dwellings and block of garages, Kirkholt estate. BS. Dep. £2 2s.

NOVEMBER 24.

***Littlehampton UDC.**—14 houses at Wickbourne estate extension. BE&S. Dep. £2 2s.

NOVEMBER 27.

***Essex River Board.**—Div. office, Peartrees-rd., Stanway, Colchester. Dep. £2 2s.

NOVEMBER 30.

***Birm. Reg. Hosp. Bd.**—Inclusion in list of firms for hospital works in five counties. Sec., BRHB, 10, Augustus-rd., Birmingham.

PAINTING, ELECTRIC LIGHTING, MATERIALS, ETC.

OCTOBER 25.

***Wrexham BC.**—Supply fireplace surrounds for 272 dwellings and metal windows with wood surrounds for 176 dwellings. BE&S, 31, Chester-st.

NOVEMBER 1.

***†West Sussex CC.**—Passenger lift, Budgenor Lodge, Midhurst. County A, Chichester.

NOVEMBER 12.

***Salford City C.**—Bathroom extension to 37 houses, Seaford-rd. estate. City E. Dep. £2 2s.

NOVEMBER 15.

***Stepney BC.**—Two passenger lifts and electric lighting, etc., and supplying to 55 flats and laying floor covering etc., to 15 flats. BE&S. Dep. £5.

ROADS, SEWERAGE AND WATER WORKS

NOVEMBER 1.

***†Bristol Corpn.**—Demolition and preparatory work to site for proposed fire station, Avonmouth. City A. Dep. £2 2s.

NOVEMBER 8.

North Cotswold RDC.—Site works at Weston Subedge. S., Council Offices, Moreton-in-Marsh. Dep. £2 2s.

Reading BC.—Concrete and tarmac carriageway, with surface sewers at Southcote-la. TC. Dep. £2 2s.

NOVEMBER 9.

Bletchley UDC.—About 12,000 sup. yds. carriageway; 3,180 lin. yds. sewers; and 1,550 lin. yds. water mains. R. L. Sherwood, Clerk of C. Dep. £5.

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NOVEMBER 10.

North Lindsey Water Bd.—Laying and jointing of 11¼ miles of cast-iron pipes, construction of break pressure chamber and pipe bridge foundations at Barrow-upon-Humber. Mr. Cyril Cooper, MICE, Engr. to Bd., Scunthorpe, Lincs. Dep. £2 2s.

NOVEMBER 11.

***Kingswood UDC.**—Road improvement works, Courtney-rd., Kingswood, Bristol. S. Dep. £2 2s.

NOVEMBER 15.

Cheltenham BC.—Slabbed footpaths and grass verges at Princess Elizabeth-way. BS. Dep. £2 2s.

Cheltenham BC.—Making-up of part of Rowanfield-rd. BS. Dep. £3 3s.

Cheltenham BC.—Making-up of Alma-rd. BS. Dep. £3 3s.

NOVEMBER 19.

Penllyn RDC.—Reinforced concrete reservoir of 200,000 gals., concrete reservoir of 20,000 gals., 10,000 lin. yds. of asbestos cement pipe and 21,000 lin. yds. of asbestos cement pipe water mains at Llanuwchllyn. Messrs. Richards and Dumbleton, Cornwall-bldgs., 45, Newhall-st., Birmingham, 3. Dep. £5 5s.

Samford RDC.—Two r.c. towers of 100,000 and 20,000 gals. capacity, Contract No. 9, at Freston and Erwarton. Binnie, Deacon and Gourley, engineers, Artillery House, Artillery-row, Westminster, SW1. Dep. £10.

NOVEMBER 22.

***Finchley Boro.**—Low-pressure apparatus, Squires-la. Baths, N3. P. M. Spencer, BE&S. Dep. £2.

NOVEMBER 29.

Cambridge University and Town Waterworks Co.—About 1,800 lin. yds. spun-iron water mains, contract No. 118. P. Porteous, MICE, Managing Director, 4, Bene't-st.

DECEMBER 3.

Wellington (Salop) UDC.—Sewerage and sewage disposal scheme, section 3. E&S. Dep. £2 2s.

DECEMBER 6.

Loughborough BC.—Service reservoir at Nanpantan Waterworks. TC. Dep. £5 5s.

GENERAL BUILDING WORK (LONDON)

Bermondsey.—DEVELOPMENT.—LCC Hsg. Com. have approved proposals for the development of the Eugenia-rd. and Corbett's-la. sites, Bermondsey and Deptford, about 17 acres in extent. The development will comprise 531 maisonettes in two 11-storey, two six-storey and 14 four-storey blocks, 15 flats in one three-storey block, 32 two-storey cottages in four terraces, and ten shops with eight flats above in two two-storey blocks. There will be two lifts in each of the 11-storey blocks and one in each six-storey block. A store and works dept will be provided to serve this estate and others in the area. The estimated cost is £1,475,115.

Camberwell.—SCHOOL EXTENSION.—LCC Ed. Com. have made proposals for the provision of four additional classrooms with cloakrooms and sanitary accommodation at Bessemer Grange county primary school, Camberwell. The buildings will form the nucleus of the nursery school eventually to be erected on the site. The estimated cost is £13,232.

Greenwich.—HOUSING DEPOT.—The closing of the housing depot at the Quadrangle-bldgs., Charlton House, and the extension and adaptation of the Blackheath depot to serve both Works and Housing Departments is recommended for MBC's approval.

Greenwich.—SITE ACQUISITION.—MBC are recommended to acquire for housing purposes the sites of Nos. 46-49 (cons.), Halstow-rd.

Greenwich. — APPOINTMENT. — MBC have been recommended to approve the appointment of G.F. K. White, FRICS, 2, Wandsworth-rd., Vauxhall, SW8, as quantity surveyor for the erection of a public library at Brook-la.; a new turkish and vapour bath department; and two four-storey and one five-storey block proposed for the completion of the Coldbath-st. estate. MH&LG approval in principle has been given to the first scheme for a public library, and MBC have approved plans prepared by BE&S. Working drawings are now in preparation. The Adoptive Committee recommend MBC's approval of the amended plans submitted by BE&S for the new vapour bath department, and substantial progress is reported by BE and S in the preparation of working drawings for this scheme.

Hackney.—CHILDREN'S HOME.—LCC Children's Com. recommend the acquisition of the site of Nos. 104-110 (even), Daubeney-rd. for the erection of a children's home.

Holloway.—SCHOOL.—LCC Ed. Com. recommend the approval of a scheme for the erection in the education building programme for 1955-56 of a county secondary school in Caledonian-rd. and Camden-rd., Holloway, at an estimated cost of £170,480. The scheme will allow for the incorporation of the buildings eventually into the proposed Holloway county college. The teaching and administrative rooms will be in a building of four storeys with the library on the top floor. An assembly hall and a gymnasium will form a separate building and the workshops will be ranged in an isolated single-storey building. The construction generally will be load-bearing brick walls, reinforced concrete floors and steel truss and light-weight deck roofs.

Islington.—DEVELOPMENT.—LCC Hsg. Com. propose to build a six-storey block of 24 flats and a four-storey block of 12 maisonettes at Newbery House extension. The extension has an area of about three-quarters of an acre, and the estimated cost is £83,845.

Islington.—SITE ACQUISITION.—MBC are recommended to acquire the site of St. Matthew's Church, City-rd., also land and properties at Nos. 317, City-rd., 1, 2, 3 and 4, Oakley-cres. and 1a, Nelson-ter., for redevelopment by the erection of 38 dwellings. Also the site of St. Matthew's Church, Nos. 231-255 (odd), Essex-rd., and garage, workshop and store at the rear of Nos. 253-5, Essex-rd., for the erection of 74 dwellings and a children's library.

Islington.—APPOINTMENT.—The appointment of E. C. P. Monson, AA.RIBA, 120, Moorgate-st., EC2, as architects, and O. E. Parratt, FRICS, Adelaide House, London Bridge, EC4, as quantity surveyor in connection with the block of 8 dwellings to be erected as a further extension of Bennett-ct. is recommended for MBC's approval.

Lambeth. — COUNCIL BUILDING. — Application for loan sanction has been made by MBC to MH&LG in regard to the erection of buildings at the New Depot, Kennington-la. (£58,486). Sanction has been received for the following projects: constructional works at Cremorne Wharf (£27,792); acquisition of site No. 33 (£9,500).

Lambeth.—FLATS.—MBC propose to convert No. 20, St. John's-cres. so as to provide seven flats: also to erect four flats on site No. 79, Mervan-rd.; and six flats on site No. 88, Woodland-hill. MH&LG has approved the acquisition for housing purposes by MBC of site No. 80, Nos. 11-15 (odd), Glenelg-rd.

Lambeth.—FLATS.—Hsg. Com. have approved the proposals of A. W. Kenyon, FRIBA, 15, Adeline-pl., Bedford-sq., WC1. for the second stage development of site No. 2, Hartingdon-rd., to include the erection for MBC of 238 dwellings in three blocks. Provision is to be made for shops, and also a shopping precinct.

Lambeth.—FLATS, MAISONETTES.—Proposals by H. Moncrieff, FRIBA, AMTPI, of Co-operative Planning, Ltd., 73b, South Side, Clapham Common, SW4, have been approved by Hsg. Co. They provide for the construction of 202 dwellings for MBC on site No. 5, Opal-st., consisting of three blocks of flats nine-storeys high, four blocks of maisonettes and flats four-storeys high, one block of dwellings three-storeys in height, comprising maisonettes and flats. The scheme makes provision for 103 pram sheds, 14 garages in two blocks and a small shopping centre which will replace the existing Fontenoy Passage. The estimated cost of the scheme is £164,000. The appointment of C. H. Hockley, 12a, Hampton-rd., Worcester Park, as consulting E for the scheme has been recommended.

Merton Park.—NEW GRAMMAR SCHOOL.—Surrey CC has approved final plans for new Rutlish School to be erected in grounds of the old Manor House, Watery-la. Accommodation will be provided for between 600 and 630 grammar school boys. Manor House, now used as nursery school, will be converted into administrative offices. Plans by Surrey CC Architect, County Offices, Kingston-on-Thames.

Paddington.—DEVELOPMENT.—MBC have obtained full planning permission for the permanent development of the following three temporary house sites: Nos. 169-175 (odd), Kilburn Park-rd (8 flats); Nos. 34-44 (even), Westbourne Park Villas (20 flats); Nos. 6-12 (even), Edbrooke-rd. (8 flats). Revised proposals have been made providing for the erection of a four-storey block of 12 flats on the temporary house site at Aldridge-rd. Villas.

Southwark.—CHAPEL.—The erection of a chapel, including hall and Sunday schools, on a site at the corner of Spurgeon-st. and Great Dover-st., has been proposed by C. S. Hammarton, 1, Broad-st.-bldgs., Liverpool-st., EC2, on behalf of the Trustees of Pilgrim Church.

Southwark.—TRANSPORT GARAGE.—No objection has been made by Works Com. to proposals by W. A. Cessford Ball, FRIBA, 205, Lavender-hill, SW11, on behalf of F. Blumfield, providing for the erection of a steel-framed building on a site at the rear of No. 94, Camberwell-rd. for repairing and servicing motor transport.

Southwark. — FACTORY AND WAREHOUSE. — TP approval has been given to proposals by Alleyn and Mansel, FF.RIBA, Staple Inn-bldgs., High Holborn, WC1, providing for the reinstatement of a war-damaged printing factory and warehouse at Tower House, Hopton-st.

Southwark.—OFFICES, FLATS AND MAISONETTE.—The erection of a new building on the site of No. 14, Trinity-st. and Victoria Hall and Victoria House, Trinity-st., comprising offices, workshops, four flats and a maisonette, has been given TP consent. The proposals have been made by Drivers, Jonas & Co., 7, Charles 2-st., SW1, on behalf of the Corporation of Trinity House.

Southwark.—SINGLE-STOREY SHOPS.—TP permission has been given to the erection of single-storey shops on the site of Nos. 98-99, London-rd. and rear of Nos. 100-101, London-rd., proposed by the London Investment and Mortgage Co., Ltd., 18, Upper Brook-st., W1.

Wandsworth.—SITE ACQUISITION.—Min. of Health have approved the sale of part of the grounds of Springfield Hospital to the LCC for housing and education purposes. The erection of a county secondary school with 2,000 places on the site has been approved by M of E for inclusion in the educational building programme for 1955-56.

(PROVINCIAL)

Accrington.—TC propose erection of crematorium. Inquiry held.—Football club propose erection of gymnasium and ambulance room.

Accrington.—CoE Auths. propose erection of sec. mod. sch. at Moorhead (Rural Dean, Rev. Glyn Jackson).

Alnwick.—RDC to start at early date with building of 20 houses, at Shilbottle, for old people. Architects, Reavley & Cahill, Lloyds Bank-chbrs.

Alnwick.—RDC approved plans for new workmen's club at Shilbottle, to cost £12,000.

Belper.—RDC propose purchase of land for erection of 60 houses at New Zealand-la., Duffield, and 32 at Lea Mills.

Birkenhead.—Tenders to be invited by Transport Dept. of Corp. for replacement of footbridge leading to Woodside ferry steamers landing stage, est. cost £30,000. Mersey Tunnel Joint Com. has sanctioned that tenders be invited.

Brighton.—EC recommend erection of gymnasium on Manor-rd. playing field, to cost £18,000 est. Plans by BE&S, 26-30, Kings-rd., Brighton 1.

Bromborough (Merseyside).—Plans well advanced for construction of factory by Electrical Division of Metal Industries Group of Companies. New company in course of formation. Chairman, K. N. Swash (Brookhirst Switchgear, Ltd.).

Carlisle.—EC to carry out additions to Carlisle and cty. high sch. at cost of £40,000. Work will begin next year. City E, L. J. A. Stow, 18, Fisher-st.

Carlton (Notts).—UDC to seek Min. approval for erection of new swimming baths and community centre.

Chippenham.—Plans prepared by BE for swimming pool. Est. cost £35,000. MH&LG approval sought.

Clayton-le-Moors.—J. & T. Engineering, Ltd., Argyle-st., Accrington, purchased premises formally occupied by Stantons Mineral Water Manufacturers, at Burnley-rd., and are to carry out extensions.

Derby.—EC appointed Grenfell Baines & Hargreaves, 12/24, Guildhall-st., Preston, as architects for erection of technical college.

Derbyshire.—Trustees of Tisington Methodists propose erection of Methodist Chapel.

Durham.—City C's proposal to erect 24 flats at "The Chains," Gilesgate, at £36,436, approved by MH&LG. City E, J. W. Green.

Kidderminster.—TC approved plans, extensions to factory at Birmingham-rd., for W. & R. R. Adam, Ltd.

Lancaster.—TC approved erection of Cattle Market and abattoir to be erected by Auction Mart Co.

Leeds.—EC received Min. approval for inclusion of Elmete Hall Special Residential School for Deaf Children (Stage 2), £73,000 est., and new day sch. for educationally sub-normal children, £25,000 est. in 1955/56 programme.

Liverpool.—TC approved estimate £50,000 for restoration and rehabilitation of museum building at William Brown-st.—Reg. Hospital Brd. propose improvements at St. Helens Hospital. A to Brd., T. N. Mitchell.

Liverpool.—Fire Services Com. to build two new stns., first in centre of Speke new township, where it is suggested £60,000 should be spent on provision of new stn. next year.

Lowestoft.—New cold store at Whapload-rd., for Herring Industries, Ltd. Plans by Thomas F. Trower, FRIBA, 74, Upper-cl., Norwich.

Manchester.—TC propose erection of aged persons' home at junction Sale-rd./Moor-la., Northern Moor. —TC considering erection of Exhibition Hall.

Manchester.—Reg. Hospital Brd. approved extensions to X-ray dept. at Preston Royal Infirmary,

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£10,787 est.; received Min. approval for twin operating-theatre unit at Burnley Gen. Hospital, £39,743 est.—TC approved in principle extensions to Strangeways Prison on site of former Assize Courts at Great Ducie-st., for Prison Commissioners.—Baird & Tatlock (London), Ltd., propose conversion of basement and ground floor of clothing factory into stores, offices and showrooms at 58, Lever-st. Architects, Reynolds & Scott, 9, Albert-sq., Manchester.—George Moulton, Ltd., propose alterations to offices at Whitley-st. and Thornton-st., Collyhurst. Architects, W. Johnson & Sons, 369, Oldham-rd., Manchester 10.—TC approved erection of 10 houses at Blackcarr-rd. and Paulden-ave., Baguley, for Albany Building Co. Architects, Drury & Gomersall, Roxy Cinema, Oxford-rd.—24 houses at Withenfield-rd. and Cherry Tree-rd., Northern Moor, Wythenshawe, for Harry Richards. Architects, Brazier & Hartington, 21, Market-st., Altrincham.—W. J. Brookes & Sons, Sharston-rd. and Bradnor-rd., Northenden, propose extensions to biscuit factory. Architect, P. Cummings, Jacey House, Oxford-st. Consulting engineers, Taylor, Whalley & Spyra, 103, Portland-st.

Matlock.—UDC approved construction of business and shopping premises at Firs estate, for J. W. Wildgoose & Sons, Ltd.; housing development adjoining High Tor-rd., Startholmes, for Messrs. Midland Developments.

Middlesbrough.—Messrs. Foister, Clay & Ward, Ltd., considering additions to their factory.

Middlesbrough.—R. Cowan, 20, Finkle-st., Stockton-on-Tees, appointed architect by Tees Valley Water Brd., for erection of valve and control houses, etc., in connection with £8m. Selset reservoir scheme.

Middleton.—BC approved plans, eight houses at Sunny Brow-rd., for W. Lionel Gray (1933), Ltd., Hospital-bldgs., Darley, Farnworth.

Morecambe.—BC to invite tenders for eight flats and six houses at Branksome-dr. estate.

Newcastle-on-Tyne.—TP Com. approved application by Smarts Motor Co., Fenkle-st., to build three-storey parking garage in Fenkle-st. and filling stn.—Plans by E. M. Lawson, Barras-bldgs., Barras Bridge, for rebuilding of Three Bulls Heads P-H., and building new offices for Hammonds United Breweries approved. —J. S. Watson (Newcastle), Ltd., to build factory in St. Lawrence-rd. Architects, T. W. Gray & Son, Front-st., Tynemouth.—City Finance Com. to report to City C that total expenditure of £675.000 is envisaged for development of municipal airport.—Plans for extensive new buildings including offices in Orchard-st., for Northern Federated Breweries approved. Architect, J. M. Angus, 21, Levaine-pl.

Newcastle-on-Tyne.—City C received loan sanction for £12,957 for erection of nine houses at Kenton North, and £65,020 for further works in connection with structural alterations to Slatyford-la. transport depot.

Newcastle-on-Tyne.—Newcastle Hospital Brd. to erect garages for blood transfusion vehicles at Gen. Hospital. Architects, Scherrer & Hicks, Harcourt House, 19, Cavendish-sq., W1.

Newton Aycliffe (Co. Durham).—Aycliffe Development Corp. received sanction to erect 370 houses, 20 bungalows and 60 lock-up garages between Corp's offices and Woodham Burn. Corp's Chief A, G. A. Goldstraw.

Northampton.—TC propose slaughterhouse at Cattle Market, £70.000 est.: approved plans for erection of garage for GPO at rear of Gladstone-rd., Dallington Field Industrial estate, for MoW.

Nuneaton.—TC to invite tenders for 48 flats at The Circle, Vernons-la.—Approved plans, extensions to factory at Quarry Yard, Church-rd., for Atlas Hosiery Co., Ltd.

Oldham.—BC to erect 48 three-storey flats on Fitton Hill estate, £68,000 est.—Approved in principle erection of aged persons' home at Holts estate.

Otley.—UDC approved conversion of 3/5, Crossgate into shop premises for J. Daphne & Son.

Redcar.—TC seek loan sanction for £134.968 for erection of 104 houses on Lakes estate. Plans by BE, Municipal-bldgs.

Redditch.—UDC to invite tenders for houses at Studley-rd. estate.

Rochdale.—New plant for producing chemicals for Armour & Co., Ltd., London, is being built at Littleborough by Hess Products, Ltd., total cost about £250,000.

Rudheath (Cheshire).—Mr. F. Stenton, Onward Garage, King-st., proposes erection of 51 houses at Gadbrook-la. (inquiry held).

Shipley.—UDC seek approval for erection of three-storey "Gregory" type flats at Wood End.

South Shields.—EC to erect additional classrooms at Simonside cty. jun. sch. and Cleadon Park cty. sec. sch. Architects, Page, Son & Hill, 75, King-st., South Shields. QS, R. S. Malloch, 6, Eldon-sq., Newcastle-on-Tyne.—Vaux & Assoc. Breweries, Ltd., Sunderland, propose licensed premises in Lakes-ave. Architects, Page, Son & Hill, 75, King-st.—Plans approved for erection of four shops with frontage of 120 ft. in Market-pl., for Ravenseft Properties, Ltd., 52, Charles-st., Berkeley-sq., London, W1. Architects, Fewster & Partners, 22, Conduit-st., London, W1.—BE, John Reid, Town Hall, prepared sketch plans for third children's home proposed at Simonside.

Washington.—UDC received sanction to spend £12.346 on erection of four shops, flats and garages at Oxford-ave.

Wellington.—RDC propose erection of houses at Sambrook, Kynnersley, Donnington, Rodlington, Tibberton, Edgmond, Overdale, Forge Row and Lawley in 1955 programme.

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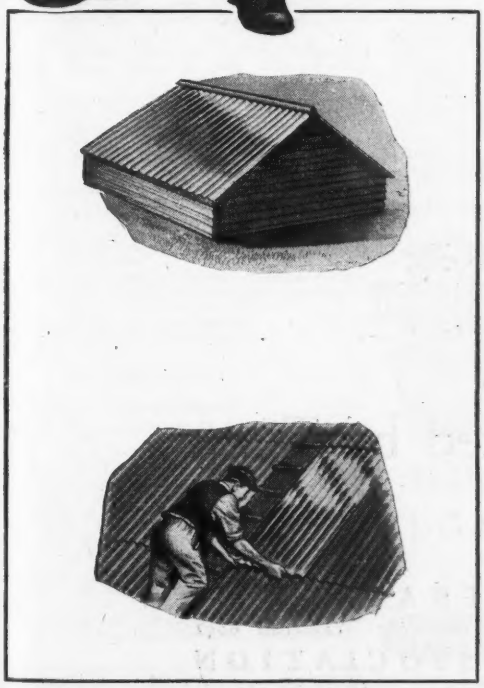

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TENDERS

* Denotes *accepted*.
† Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modification*.
¶ Denotes *accepted by H.M. Government Departments*.

Accrington.—Four shops and four flats, Within Grove estate, for BC. G. Heys, MSc. (Tech.), MIMunE., BE&S: *D. L. Grimshaw & Co., 35-37, Burnley-rd., Waterfoot, Rossendale, Lancs, £11,379.

Alloa.—Maisonettes, terrace houses, shops and flats at West of Brook site. Alexander Bracewell & Son (F), architects, "Middleton," Tillicoultry, Clackmannan: *D. & J. Ogilvie (Builders), Ltd., Bridge-st., Contracting Works, Alloa.

Argyllshire.—150 houses at Oban site, Dunollie. J. Austin Bent (A), architect, 15, Palmerston-pl., Westend, Edinburgh: *Blackburn (Dumbarton), Ltd., Jameston, Vale of Leven, Dunbartonshire.

Ayr.—New showrooms, two petrol tanks, storage buildings and additions at Main-st., Whifflet, Ayrshire, for Allan & Reid (Ayr), Ltd. Edward A. Darnley (F), architect, 130, High-st., Ayr: *George Reid & Sons, Ltd., Townhead Contracting Works, Catrine, Ayrshire.

Barrowford.—Branch library at Ann-st.: *Sager Bros., Nelson, £10,000.

Brentford and Chiswick.—Erection of 150 dwellings at Ealing-rd., for TC: *Norman Sinclair, Ltd., £363,536.

British Railways (Eastern Region).—Contracts placed: John Willmott & Sons (Hitchin), Ltd., Walsworth-rd., Hitchin, Herts, Reconstruction of roof to locomotive shed at Hornsey Motive Power Depot; Taylor, Woodrow (Building Exports), Ltd., 41, Welbeck-st., London, W1, Supply, delivery and erection complete of "Arcon"-type steel-framed building for use as road vehicle shop at Temple Mills Marshalling Yard; Caffin & Co., Ltd., 25, Craven-st., Strand, London, WC2, Track alterations, platform extension and construction of stores building at Leigh-on-Sea Station; Craven Bros. (Manchester), Ltd., Vauxhall Works, Reddish, Stockport, Supply and delivery of heavy duty carriage and wagon wheel lathe for Temple Mills wagon shop; Tersons, Ltd., 4, Dollis Park, Finchley, London, N.3, Renewal of permanent way in Peterborough district.

British Railways.—New London Midland contracts: Henry Hope & Sons, Ltd., Smethwick, Birmingham, for renewal of roof coverings with patent-glazing at Irlam o' th' Height carriage shed; W. T. Pickering & Sons, Ltd., Watford Heath, Watford, for labour only for cleaning and painting of overhead girders at Somers Town coal depot, London; Simcock & Usher, Ltd., St. Leonards-rd., Northampton, for new office accommodation at Corby and Weldon goods depot; The Butterley Co., Ltd., Butterley, nr. Derby, for reconstruction of superstructure of Bridge No. 120 Manchester and Liverpool line, Green-la., Patricroft; Edward Wood & Sons, Ltd., Park-st., Derby, for variations on inside engine pits, drainage and windows at Walsall motive power depot; W. G. Kaleyards, Ltd., Victoria-rd., Chester, for renewal of roof coverings with patent glazing (Stage 1) at Chester General station: Weston & Co. (Manchester), Ltd., 97, Bridge-st., Manchester, 3, for renewal of roof coverings with protected metal roof sheeting (Stage 1) at Chester General station

Carlisle.—Nurses' recreation hall at Cumberland Infirmary: *John Laing & Son, Ltd., Carlisle, £16,947.

Carlisle.—Works for TC:—Resurfacing of children's playground: *Michael Thompson, Carlisle, £1,510; footpaths at Harraby estate: *Direct Labour, £8,828; surfacing of roads—Upperby Village West and Harraby Site No. 3: *Pirie & Co., Ltd., Paisley, Scotland, £4,908.

Edinburgh.—Laboratory block for National Coal Brd., at Corstorphine site, on the North Kyle-rd. D. D. Jack (F), Chief A. 24, Royal-cres., East Edinburgh: *James Laidlaw & Sons, Ltd., Clydedale Contracting Works, Dalmarnock-rd., Rutherglen, Lanarkshire (est. cost £50,000).

Heckmondwike UDC.—Work in all trades for the erection of eight aged persons' dwellings in Strawberry-sq. J. K. Garlick, S.E. Council Offices:—

*E. Kilburn & Son, Hanging Heaton	£5,448
*G. Richardson & Son, Batley Carr	1,576
*Firth Bros., Morley	367
*Scorahs, Ltd., Ravensthorpe	747
*A. Idle & Sons, Heckmondwike	624
*Scorahs, Ltd.	138
*F. W. Birkett & Sons, Cleckheaton	236

Islington.—Construction of 25 dwellings at Landseer-rd., for BC:—

Dove Bros., Ltd., N1	£54,973
Parr (Builders), Ltd., Parway House, NW3	53,816
W. J. Simms, Sons & Cooke, Ltd., W1	52,144
J. S. Alderton & Co., Ltd., SW11	51,810
Gee, Walker & Slater, Ltd., W1	51,429
Rowley Bros., Ltd., N17	51,206
*W. H. Gaze & Sons, Ltd., 19-23, High-st., Kingston-on-Thames	49,930

Kensington.—Erection of 12 flats at 169-179, Finborough-rd., for BC.*H. Fairweather & Co., Ltd., £27,537.

Kidderminster.—30 houses at Franche estate, for TC: *J. & R. Perrin, Ltd., Sutton-rd., Kidderminster, £41,110.

Lambeth.—Construction of six flats at St. Louis-rd., for MBC: *H. J. Oliver & Sons, Ltd., £12,081 (subject to necessary approvals).

Lambeth.—Construction of the slipper baths and laundry establishment, for MBC:—

Trollope & Colls, Ltd., WC2	£131,950
F. & H. F. Higgs, Ltd., SE24	130,107
Holloway Bros. (London), Ltd., SW1	129,754
Higgs & Hill, Ltd., SW8	127,881
James Carmichael, Ltd., SW18	124,430
Griggs & Son, Ltd., SW1	123,634
Prestige & Co., Ltd., SW1	119,856
*F. Troy & Co., Ltd., 129, Great Suffolk-st., SE1	118,624

Leeds.—Erection of Temple Moor gram. sch., for EC: *Wm. Airey & Son (Leeds), Ltd., Eldon House, Leeds. £161,261.

Leominster.—Further 33 houses at Westfield Walk estate, for BC: ‡George Harris & Co., Ltd., £41,421.

Liverpool.—Following for Reg. Hospital Brd:—New chest clinic at Chester and Dist. Hospital: *G. & R. Brimcombe, Ltd., £14,427; reinstatement work at Mill-rd. Maternity Hospital; *Wm. Bradshaw (Contractors), Ltd., Poulton-rd., Wallasey, £14,295.

Loftus.—Public conveniences, for UDC, at Skinningrove, Liverton Mines and West-rd. Architect, C. D. Taylor (L), 41, Baxtergate, Whitby: *F. J. Willis & Son, High-st., Hinderwell, Saltburn, Yorkshire.

L.C.C.—Contracts placed: Erection of scaffolding to chimney stacks at East Hill estate, Wandsworth, Palmer's Travelling Cradle & Scaffolding Co., Ltd., Southwark, £3,281; Construction of blocks Nos. 3-7, 9, 10, 11, 12 and 13 of flats, laundry, clubroom and other works in connection therewith at Trinity estate extension (Grove-st.), Deptford, Wilson Lovatt & Sons, Ltd., Westminster, £461,973; Repairs, redecoration and improvements at Hugh Myddleton Secondary Schools, Finsbury, O. H. Groves & Co., Ltd., £21,832; Laying out of gardens at Agnes Riley Garden, W. H. Gaze & Sons, Ltd., £7,729; Laying out of Priest Hill playing field, Ewell, Surrey, E. Doe & Sons (Contracts), £84,602; Painting and repair work (Group 112) at Brandon estate (Southwark and Camberwell), C. Brittian, Westminster, £3,279; Supply and erection of sawn oak pale fencing at Bellingham estate, Lewisham, Durafencing (London), Ltd., Catford, £11,113; Construction of pile and beam foundations for block No. 6 of flats and maisonettes and other work at Bulow-rd. site, Fulham, The Franki Compressed Pile Co., Ltd., Westminster, £8,906 10s.

L.C.C.—Erection of cty. sec. sch. in the Hurlingham area (Fulham West):—

Prestige & Co., Ltd., Westminster	£276,016
Holloway Bros. (London), Ltd., Westminster	270,852
Demolition & Construction Co., Ltd., Westminster	263,914
A. E. Symes, Ltd., Stratford	261,240
Thomas & Edge, Ltd., Woolwich	260,571
Y. J. Lovell & Son, Ltd., Paddington	260,286
C. Miskin & Sons, Ltd., St. Albans	259,650
G. E. Wallis & Sons, Ltd., Westminster	257,665
W. J. Simms, Sons & Cooke, Ltd., Westminster	251,263
Tersons, Ltd., Finchley	249,715
Kirk & Kirk, Ltd., Wandsworth	249,553
*Gee, Walker & Slater, Ltd., Westminster	247,975

Comparable estimate of Richard Sheppard & Partners, the architects responsible for the scheme, is £255,000.

Reconstruction of south wing of the main block of Woolwich rest centre:—

Siggs & Chapman, Ltd., Croydon	£27,113
William Mills & Son, Ltd., Greenwich	25,118
Frederick Smith & Co. (Builders), Ltd., Deptford	23,945
Kerridge (Cambridge), Ltd., Cambridge	23,932
John Mather (Builders), Ltd., Finsbury	23,275
*Howard & Co., Holborn	22,278

Architect's comparable estimate is £22,067.

Construction of 30 flats in a five-storey block on the Neptune-st. site, Bermondsey. Six tenants' stores and a temporary playground also to be provided:—

Rowley Bros., Ltd., Tottenham	£65,880
Catchpole & Co., Ltd., Potters Bar	64,850
S. G. & A. Agombar, Beckenham	63,653
Token Construction Co., Ltd., Westminster	63,235
E. H. Smith (Croydon), Ltd., Croydon	63,140
J. M. Hill & Sons, Ltd., Wembley	63,097
W. J. Cearns, Ltd., Stratford	62,575
M. Howard (Mitcham), Ltd., Mitcham	62,100
Thomas & Edge, Ltd., Woolwich	61,470
*A. T. Rowley (London), Ltd., Tottenham	60,744

Architect's comparable estimate is £60,783.

Construction of four-storey block of 26 maisonettes and six tenants' stores at Woodberry Down estate extension, Stoke Newington:—

Norman Sinclair, Ltd., Hammersmith	£59,968
Thomas & Edge, Ltd., Woolwich	59,366
The Demolition & Construction Co., Ltd., Westminster	58,995
W. J. Jerram, Ltd., East Ham	58,798
S. G. & A. Agombar, Beckenham	58,785
Catchpole & Co., Ltd., Potters Bar	57,713
Sloggetts (Contractors), Ltd., Kensington	57,691
A. T. Rowley (London), Ltd., Tottenham	57,339
Rowley Bros., Ltd., Tottenham	56,688
*J. M. Hill & Sons, Ltd., Wembley	55,837

Architect's comparable estimate is £55,446.

Erection of cty. prim. sch. at Hornsey-la. (Islington North):—

Wm. J. Jerram, Ltd., East Ham	£113,411
Y. J. Lovell & Son, Ltd., Paddington	111,353
Patman & Fotheringham, Ltd., Islington	111,324
Lavender, McMillan, Ltd., Worcester Park	110,989
J. Garrett & Son, Ltd., Balham	109,930
Halse & Sons, Ltd., Woolwich	107,997
Sloggetts (Contractors), Ltd., Kensington	107,867
Gee, Walker & Slater, Ltd., Westminster	107,499
Token Construction Co., Ltd., Westminster	106,782
*H. Fairweather & Co., Ltd., Muswell Hill	102,391

Comparable estimate of Mr. H. T. Cadbury-Brown, FRIBA, the architect responsible for the work.

Repair, redecoration and improvement of Hugh Myddelton (North and South) cty. sec. schs. (Shoreditch and Finsbury):—

Douglas Grant & Partners, Finsbury	£33,797
King's (B.D.J.), Ltd., Teddington	25,781
A. T. Rowley (London), Ltd., Tottenham	24,798
Fassnidge, Son & Norris, Ltd., Westminster	24,150
J. & J. Dean, Ltd., Leyton	23,674
Howard & Co., Westminster	23,100
John Mather (Builders), Ltd., Finsbury	21,980
*O. H. Groves & Co., Ltd., Southwark	21,832

Architect's comparable estimate is £24,290.

¶London (Air Ministry).—Contracts to value of £500 or over for week ended October 16:—

Building work: Farrans, Ltd., 78, Mount-st., London, W1; F. Parkinson, Ltd., Mowbray-dr., Blackpool. *Resurfacing work*: Y. J. Lovell & Son, Ltd., 17, Easton-st., High Wycombe, Bucks. *Aviation fuel installation*: Kerridge (Cambridge), Ltd., Sturton-st., Cambridge. *Civil engineering*: Rogers Bros., Ltd., Walton House, Felixstowe, Suffolk. *Runway construction, etc.*: Thos. Lowe & Sons., Ltd., Broadwaychbrs., Hammersmith, London, W6. *Heating services*: The Brightside Foundry and Engineering Co., Ltd., 17, Summer-row, Birmingham 3. *Erection of timber towers*: William Harbrow, Ltd., 214, Rotherhithe New-rd., London, SE16. *General Maintenance work*: R. Hosken & Son., Gloucester-pl., Newlyn, Penzance.

London (Metropolitan Police).—Contracts placed:—Erection of 36 married quarters at 1-17, Adelaide-rd, Chalk Farm: *Speirs, Ltd., £100,549.

¶London, (MOW).—Contracts placed by MOW for week ended October 9.

London: Kings Beam House, Gt. Tower-st., EC3, internal decorations, J. W. Green (Painters), Ltd., 171, Graham-rd., Wimbledon, SW19; PO HQ Building, St. Martins-le-Grand, EC1, alterations and redecorations to photographic section, Clemens Bros., Ltd., 77, Derby-rd., Forest Gate, E7; Adelphi Building, John Adam-st., WC2, repairs and decorations, John Greenwood, Ltd., King William-st. House, Arthur-st., EC4; MOS, Garland-rd., Plumstead, new tank house and water tower and new cold water supply and fire mains, J. B. Edwards & Co. (Whyteleafe), Ltd., Kenley House, Kenley-la., Kenley, Surrey. *Gloucestershire*: Lydney, Gloucester, erection of new crown building, F. I. Imm & Co., Ltd., 41, High-st., Lydney, Glos. *Lanarkshire*: State Institution, Carstairs, staff dwelling houses, John Laing & Son, Ltd., Dalston-rd., Carlisle. *Lincoln*: Branch PO, Scunthorpe, alterations to public office, etc., B. Pumfrey, Ltd., Wintern Works, Lea-rd., Gainsboro, Lincs. *Middx.*: DSIR Road Research Laboratory, Harmondsworth, Marston shedding, Sloggetts (Contrs.), Ltd., 142/4, Cromwell-rd., London, SW7, *Perthshire*: Inchture, TR station, J. B. Stewart & Sons, 22, Queen-st., Coupar, Angus. *Renfrewshire*: Press Building, ROF, Bishopton, carrying out adaptations, George Wimpey & Co., Ltd., 37, Drumsheugh-gdns., Edinburgh, 3.

¶London (War Dept.).—Works contracts placed by War Dept. for week ended October 9:—

Ches: Painting and decorating, J. Lightfoot & Son, Chester. *Staffs*: Building, Sir A. McAlpine & Son, Ltd., Wolverhampton. *Flints*: Roadwork, Penmaenmawr & Trinidad Lake Asphalt Co., Ltd., Liverpool. *Staffs*: Electric installation, Frank Hancock (1939), Ltd., Stoke-on-Trent. *Lancs*: Building, R. S. Ainscough, Ltd., Delph, nr. Oldham. *Northamptonshire*: Building, Robert Marriott, Ltd., Rushden. *Notts*: Building, C. V. Russell & Son, Newark. *Essex*: Boiler-house plant, Danks of Netherton, Ltd., Dudley, Worcs. *Berks*: Boiler-house plant, Brightside Foundry

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& Engineering Co., Ltd., London. *Gloucestershire*: Building, Hawksley Constructions, Brockworth, Gloucester. *Wilts*: Painting and decorating, Fields, Ltd., Reading. *Oxfordshire*: Building, L. W. Foster, Oxford. *Dorset*: Building, Jesty & Baker, Weymouth.

Luton.—Four shops with four flats over at Yeovil-rd., Ashcroft-rd. housing estate, for BC: F. Oliver, AMICE, BE&S, Town Hall:—

Building Contractors (Luton), Ltd., Luton	£19,428
Geo Wimpey & Co., Ltd., London, W6	18,937
H. & H. E. Sanders & Son, St. Albans	18,159
*C.W. Construction, Ltd., St. John's Works, Penn, Bucks	17,355

Manchester.—Works for City Council:—319 houses at Langley estate: *Direct Works Section; 216 houses at Langley estate: *C. Chapman & Sons, Ltd., Altrincham; 254 houses at Langley estate: *H. Owen & Son, Ltd., Stockport.

Middlesbrough.—New stores at Linthorpe-rd., for Binns, Ltd. Architect, Gordon Jeeves, 61, Catherine-st., London, SW1: *Leslie & Co., Woodland-rd., Darlington.

Middlesbrough.—Construction of reinforced concrete reservoir at Nunthorpe, for Tees Valley Water Brd., Corporation-rd., Middlesbrough: *Purdie Lumsden & Co., Ltd., Oxford-st., Newcastle-on-Tyne.

Morecambe and Heysham.—22 houses and four flats at Branksome-dr. estate, for BC: *Wm. Huddleston & Sons (Morecambe & Heysham), Ltd., Back Sefton-rd., Morecambe.

Newburn (Northumberland).—Erection of licensed premises at Burnside, West Denton, for J. Rowell & Son, 143, High-st., Gateshead. Architects, Wetherell & Lamb, "Tweedholme," Picton-pl., Newcastle-on-Tyne: *Thomas Clements & Son, Selborne-gdns., Newcastle-on-Tyne.

Newcastle-on-Tyne.—Erection of clinic at Percy Hedley School for Spastic Children, Forest Hall. C. C. Brown, County Hall, Newcastle-on-Tyne, honorary architect: *G. L. Currie, Balmoral-ter., Newcastle, £13,621.

Northampton.—38 flats at Central-dr. area redevelopment scheme: *Tersons, Ltd., London, £83,000; 52 flats and maisonettes at Park-dr., Kings Heath: *Drabble Construction, Ltd., Bank-chbrs., College-st., Rushden, £60,549; 33 flats, maisonettes and small dwellings in Central area redevelopment: *Direct Labour, £46,464; 12 dwellings at Eastfield: *Branson & Jones, 36/38, Milton-st., Northampton, £12,905; seven flats and maisonettes at junction of Kingsland-ave. and Harborough-rd.: *Direct Labour, £11,520.

Northwich.—81 dwellings at Leftwich estate, for UDC: *W. E. Jones, Lewin-st., Middlewich.

Plymouth.—New premises for Montague Burton, Ltd., New George-st., corner Armada-way. A&S, N. Martin (A), Chief A. Montague Burton Construction Co., Ltd., Hudson-rd. Mills, Leeds 9: *A. N. Coles (Contractors), Ltd., Sutton-rd., Plymouth.

Ruthergien.—14 houses at East Kilbride-rd., Burnside, Ruthergien. Norman Macfadzean (F), architect, 137, West Regent-st., Blythswood, Glasgow, WC2: *John Lawrence & Co. (Glasgow), Ltd., West Regent-st., Glasgow, WC2.

St. Marylebone.—Erection of four flats in block 2 at Queen's-ter. estate, for BC: *J. M. Hill & Sons, Ltd., Heather Park-dr., North Circular-rd., Wembley, £6,227.

Sandwich.—Alterations and extensions to works, for Murgatroyd Salt & Chemical Co., Ltd.: *J. Gerrard & Sons, Ltd., Swinton, nr. Manchester.

Seaham.—30 terrace houses at Parkside estate, for UDC. A. M. Smith, S: *Direct Labour.

Sheffield.—Shops and offices at High-st., for Saxone Shoe Co., Ltd.: *George Longden & Sons, Ltd., St. Peter's-cl., Sheffield.

Sheffield.—Following for Reg. Hospital Brd.:—Ante-natal clinic at Scarsdale Hospital: *W. Revill & Son, Ltd., Sherwood-st., Chesterfield, £10,256. Female patients' occupational therapy unit at Kiasgway: *Harris Bros. (Marehay), Ltd., Derby-rd., Ripley, £9,680.

Southport.—Alterations and repairs at Ainsdale Lido, for BC: *T. Southworth & Sons, Ltd., Southport, £14.780.

South Shields.—Erection of butchering and confectionery departments at Prince Edward-rd., for Jarrow & Hebburn Co-op. Soc., Ltd., Albert-rd., Jarrow. Plans by CWS Architects' Dept., 90, Westmorland-rd., Newcastle-on-Tyne: *CWS Building Dept., West Blandford-st., Newcastle-on-Tyne.

Sunderland.—Erection of 37 houses at Grindon Village estate, for TC. H. C. Bishop, Boro' A, Grange House, Stockton-rd., Sunderland: *L. W. Evans, Ltd., 18, Norfolk-st., Sunderland, £41,251.

Wallsend.—Erection of 104 houses for TC: *J. H. James, Wallsend.

West Bromwich.—48 houses at Hateley Heath estate, for BC: *F. A. & H. Taylor, Ltd., Croxstall-rd., Bloxwich, £58,647.

West Hartlepool.—Erection of boilerhouse, etc., at West Hartlepool Gen. Hospital, for Newcastle Reg. Hospital Brd., "Dunira," Osborne-rd., Newcastle-on-Tyne. P. H. Knighton, Board's Chief A: *John Proud, Ltd., York-rd., West Hartlepool, £16,982.

Yarm-on-Tees.—Extensions to Low Worsall pumping stn., for Tees Valley Water Brd., Corporation-rd., Middlesbrough. T. S. R. Winter, Chief E: *Hennebique Contracting Co., Ltd., Leeds.

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